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Computing
WEEKLY

40p

21-27 June 1984 Vol 3 No 25

BRITAIN'S BEST-SELLING MICRO WEEKLY





STAR GAME
Brickie on BBC B
see page 10

News Desk

Thorn EMI imports from States

THORN EMI's software distribution division has begun a campaign to import American software into the UK

It has already gained the marketing rights to Californian company HesWare's games, bringing them to Britain for the first time, and it is strongly rumoured that another Californian-based house Electronic Arts is also taking part in negotiations with Thorn EMI

"Sixteen HesWare games will be released from Thorn EMI shortly" said Thorn's Glen McAlister They will include not only games but also educational programs

"We hope to be marketing over thirty programs of HesWare's range — the next batch will be released in a couple of months"

Not included in the deal are Jeff Minter's games which HesWare market in the US "The idea is to bring over games which have previously only been available in the States"

However one of the first Thorn EMI releases is *Minnesota Fats Pool Challenge*, which is actually a renamed version of *Hustler* by Bubble

continued on page 5 ▶

From your TV to your micro

NOW after computer game of the movie comes 'computer game of the tv show

Twentieth Century Fox are selling the computer game rights of two successful series to software houses

Automan (currently showing on Saturday 5 05, BBC 1) will be converted into a game by Bug Byte while the rights to the ITV series *The Fall Guy* have been sold to a new British software company

"The deal for *Automan* gives Bug Byte the rights to sell the game in the UK Europe and other English speaking countries apart from the US and Canada," said Maggie Corke Twentieth Century Fox's international sales co ordinator

"We have to make sure that the finished game shows *Automan* in his true light but the type of game Bug Byte produces however is entirely up to the company"

Automan is a holographic *Tron* like character who can walk through walls and become invisible Created by a computer programmer in the tv series, he is an ideal candidate for a computer game

continued on page 5



Chuck Wagner as Automan in the tv series of the same name

This Week



The sky's the limit!! for fun and excitement with these cracking new stunners from Ocean
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Accuracy
Popular Computing Weekly cannot accept any responsibility for any errors in programs we publish although we will always try our best to make sure programs work

This Week

Editorial

By using Microdrives in the QL Sinclair is taking a risk that the machine may never receive proper software support.

Anyone who writes a brilliant program for the QL cannot simply trot off to the nearest duplication plant, run off a few thousand copies and start selling them because Sinclair keeps sole control of Microdrive manufacture and duplication to itself

The result is as one would expect So far there are four programs for the QL — the same four as there were at the start And it is difficult to see how, even with the most ambitious publishing programme Sinclair alone can provide the depth of software support that will make the QL a success

The Sinclair name will no doubt help in the UK but in the US the going will be a lot tougher What American software house is going to put itself out and start negotiating with Sinclair for supplies of Microdrive cartridges when instead it could be writing for the Apple, Commodore or IBM machines — all of which are already established?

All of which is a great pity If the QL had a single 3 inch Hitachi or 3½ inch Sony disc drive in place of the twin microdrives then the situation would be different With a Sony drive the QL could even have been compatible to a limited extent with the Apple and Macintosh

But that would not be in the proper order of things Sinclair unswervingly pursues its own idiosyncratic path. As a Sinclair spokesman commented last week "It is not our policy to seek compatibility with other machines"

Sinclair is surely making a mistake For the US the QL must have a built-in disc drive

In the UK Sinclair must dramatically lower the cost of blank Microdrive cartridges and quickly open up avenues for their duplication


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Thorn EMI

continued from page 1

Bus, who licensed the game to HesWare to be marketed in the US. Yet *Hustler* will continue to be available in this country through Bubble Bus.

"That is the only one of the games that has been released in this country before," explained Thorn EMI's Lee Richards. "It was included in the deal because we thought it was a particularly good game."

The 16 Hes games are all available on either the Vic 20 and Commodore 64 and conversions for other machines are expected soon. All but two of the programs are produced on Turbo Tape cassettes. Turbo Tapes speed up loading considerably, so that many of the programs can be loaded in around a minute.

The HesWare titles will be pricey. The cassettes range from £9.95 to £14.95 and disc or cartridge versions will be available for some of the programs with prices starting at around £23.00.

Recent HesWare release *Hes Games*

TV games

continued from page 1

bought the rights to *The Fall Guy*, which stars Lee Majors, is being set up by Steve and Richard Wilcox. The company is as yet untitled, a competition to select its name will shortly be run in the magazine *Computer and Video Games*.

As with *Automan*, Twentieth Century Fox reserve the right to view the game's artwork and ensure the game is presented in an authentic manner.

"We're planning to concentrate on licensed titles for our games," said Steve Wilcox, "and we are working on others, all US tv series at the moment, which we want to bring out before the end of the year.

"*The Fall Guy* will be an arcade style adventure for the Spectrum. We have the rights to the title in the UK and Europe, but not the States, where the title is owned by another company."

Spinning-off video games from tv series and films is becoming a fashionable pastime. In the US Datasoft has licensed the *Dallas* characters and Atari has recently announced its video game based in the new Spielberg produced film *Gremlins*. Parkers has recently announced *007 James Bond*, based on the successful film series.

Micro use will foil the burglars

COMMODORE 64 and Vic 20 owners can now use their computers to stop their homes being burgled.

Micro Security has produced the Sentinel Home Security system which can connect the computers to standard burglar alarm equipment.

"The system uses an I/O interface unit which connects into the Commodore's user port," said Steve Coaker, Micro Security's managing director.

"The computer takes the place of the control panel in an ordinary burglar alarm, but it has the advantage of being able to program the system to do a variety of things, such as delaying the time between a break in being detected and the alarm sounding, setting an automatic cut-off time for the alarm or simply programming the length of time the alarm sounds for."

The interface unit has two input channels which connect to the intruder detection devices — magnetic reed contact switches on doors and windows, pressure mats and vibration detectors.

It also has six output channels which can be used to control light switches and appliances to make it look as though the house is occupied.

The complete kit including the interface, software on tape or disc, the alarm bells and magnetic reed contacts, costs £104. A pack containing just the interface and software costs £62.45. Both options are available by mail-order only from Micro Security, PO Box 18, Havant, Hants.

The receiver steps in

CARNELL Software has called in the receiver.

The company, set up by Roy Carnell and Stuart Galloway three years ago, has produced acclaimed adventures such as *Black Crystal* and most recently, *Wrath of Magra*.

"We were having problems earlier this year," said Roy Carnell, "but hoped that sales of *Wrath of Magra* would keep us going. Unfortunately we were forced to call in the receiver."

However, the outlook for Carnell's games is hopeful.

"We're currently negotiating with several companies who have shown an interest in taking on our titles," Roy continued. "I am hoping that within the next two weeks an arrangement will have been made to keep the games going."

Stuart Galloway (top) and Roy Carnell

New tape drive storage system

A NEW fast low cost tape drive storage system is soon to be launched for the Commodore 64 and Spectrum micros, with the latter device a direct competitor for the ZX Microdrive.

The system — the Wafadrive — is being manufactured in the US by Astec, a division of BSR, and will be distributed in the UK by Rotronics in High Wycombe.

The UK version of Wafadrive will be a twin tape drive unit each with a maximum storage capacity of 128K. The individual drive units are larger and more robust than their Sinclair counterpart. The tape cartridges themselves will be available in three sizes, 128K, 64K and 16K, priced at £3.95, £3.65 and £3.45 respectively. The Wafadrive unit also features built-in Centronics and RS232 interfaces.

In this country Rotronics will be including a free wordprocessor software cartridge with every Wafadrive. Graham Booth, Rotronics's sales manager said: "Hewson Consultants will be writing the Commodore word processor and we are hoping that the Commodore system will be compatable with all the machines including the new Plus/4 and 16."

The Spectrum version will be the first to go on sale though, scheduled for August at £129.95 in major retailers. The Commodore unit will follow in October at £159.95.

QL interest at Earl's Court

LARGE crowds turned up for the Earl's Court Computer Fair last weekend.

The Sinclair stand dominated the show and the QL's on display attracted much interest. The machines appeared without their external Eprom boards and Sinclair is claiming now to be sending out machines to customers in this form.

After Dragon's announcement that it has called in the receiver it was surprising to see the company out in force. Dragon's big stand was rumoured to have been paid for by GEC so the Dragon may yet overcome its latest crisis.

Commodore showed its Plus/4 and C16 machines. The Vic 20 machines on the Commodore stand were outnumbered 15 to 1 by C64s.

Acorn launched its expansion unit for the Electron — the Plus 1. For £59.90 the add-on gives the Electron Centronics printer and joystick interfaces and twin Rom cartridge slots.

On the software side there was little of interest. The one exception was Psion's *Match Point* tennis game for the Spectrum.

Letters

Eye of the Star Warrior

Some readers who sent off for our *Eye of the Star Warrior* tape offer have been experiencing difficulty in getting the program to work. It appears that Line 2190 has on some tapes been corrupted in duplication.

Even though it looks OK, the line should be typed in again

```
2190 DATA "010304050607122224", "020710222324",
"020710222324", "06071324",
"0207102324", "06071324",
"020405061013222324",
"020405061013222324",
"060724", "0304222324",
"020405071022324",
"0304142222324",
"010506071213222324",
"0203041422324",
"0203041022324",
"0304071422324", "2324"
```

Tony Bridge
London

Word-processor packages

Having recently read Malcolm Davidson's review of the QL's word processor *Quill*, I found it disturbing the way he assumed that the average reader has a knowledge of expensive business word-processors.

Surely it would have been better to compare *Quill* with other packages that the readers are more likely to have come across with their own home micros — such as *Telewriter*, *Tasword* and *Wordcraft*.

Malcolm also spent time reviewing features that are not even found in *Quill*. Surely the space could have been put to better use by telling us how many pages of A4 text can be handled by *Quill*, and how many characters are displayed on the screen — it may well have 64 or 84 columns, but how many rows?

A picture of the *Quill* screen in action would have been better than the machine shot you used, too.

Not impressed with the *Quill* review, I turned to the letters page. There I found Mr Cunningham comparing QDos and *Quill* with CP/M and *Wordstar*. A quick look in another magazine revealed that CP/M and *Wordstar* together cost over £500. Mr Cunningham may have money to throw around, but for that money I can buy a QL with QDos and *Quill* and still have enough change left over to buy 20 of those expensive microdrive cartridges he complains about.

I agree with the other points he makes, but purely on the grounds of economics, QDos and *Quill* seem to have the edge.

A J Pimperton
Gosford
Coventry

Dead-end clearings

Having spent just over one and a half hours battering at my squidgy keyboard, I have finally completed Ultimate's new Spectrum game *Sabre Wulf* with a score of 94 per cent and 45720 points.

The four pieces of the medallion can only be found in "dead end" clearings, ie, those with only one entrance/exit. When assembled, they depict a snarling wolf's head. Their location varies from game to game, so it is well worth making a map as you go along — like *Atic Atac* — to keep track of which clearings have been searched.

Gordon Ramsay
Higher Polsloe
Calthorpe Road
Whipton
Exeter

"Did you get the computer?"

Eprom cartridge

It's here! Well that's what you said when you received your QL. Yes, I too am now the proud owner of a Sinclair QL.

The only disappointing thing about the machine is the Eprom cartridge which must be inserted into the Rom slot at the rear of the computer. In a letter which I received with the QL, Sinclair have said, "As soon as the firmware is available in Rom form, we will notify you, so that you can return your QL to us for the Roms to be added to the main board inside the case, leaving the external Rom cartridge slot free."

My question is this. Is it going to cost me more money, and how long will this Rom exchange take?

Something which a friend of mine noticed was that I received my QL on the same day as the eclipse of the sun (Wednesday May 30). He also pointed out that I need not worry about the Rom exchange as that is unlikely to happen until the next eclipse we encounter.

Finally, I would like to give a plug for the The Hayes Computer Club. Anyone wishing to join, please contact me.

RF Gavin
15 East Walk
Hayes
Middlesex

Commercial piracy

I am writing in reaction to the article on GOSH (*PCW* June 7).

David Kelly does make some very valid points — I myself know of software swapping/home pirating circles that exist within clubs and schools, and I do not for one moment dispute Rod Cousens' claim of the commercial piracy of Quicksilva's *Fred*.

However, a distinction must be made between piracy for the monetary gain of professional pirates, and piracy through individuals finding software too expensive to buy every tape that they want. Commercial pirates should and must be stamped out, but the 'socially acceptable' home pirates are a totally different case. Software houses obviously believe the blame for home taping lies only at the door of the customers. Have they never considered that they could be pricing themselves out of business?

In the article Rod Cousens said that if piracy was stopped, then prices would fall. But, as I see it, if prices dropped first then home taping would die out because consumers would be more prepared to buy software. I certainly think that £6 to £16 is too expensive for one program.

This may sound naive, but if one software house led the way and cut prices then the others would be forced to follow or else risk being priced out of the market.

Reducing prices would also hit commercial pirates. Pirating would become less profitable and hopefully the 'professionals' would look for other ways of making their money.

Graham Stock
60 Mortimer Crescent
Worcester Park
Surrey

Vic20 pokes

I own a Vic 20 and I have come across some interesting *Pokes*. Here are some of the more useful ones.

Poke 808,127	disables Run/Stop
Poke 808,112	re-enables Run/Stop
Poke 37155,255	disables keyboard
Poke 37155,0	re-enables keyboard
Poke 768,255	disables error message
Poke 768,58	re-enables error message
Poke 775,0	disables list
Poke 775,199	re-enables list
Poke 650,128	key repeat
Poke 650,0	key normal
Sys 64802	resets computer
Print Chr$ (8)	disables Shift/Comm
Print Chr$ (9)	re-enables Shift/Comm

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Star Game

Brickie

Trap the monster and then watch it explode in this game for BBC B by Ian Ferguson

This game for the model *Brickie*. The idea of the game is to trap the "Monster" using building bricks until it is completely enclosed and cannot move whereupon it explodes. This must be done within 60 seconds, or the man explodes.

There are three levels of difficulty — The game must be played either with joystick or with keyboard.

The main part of the program is a Repeat/Until loop using the "Time" pseudo-variable to count up to 60 seconds. The main procedures are as follows:

Procvan — title page
Proctime — prints remaining time
Procchec — checks if alien is blocked in
Procalien — alien movement routine
Procdeath — prints exploding character and plays rapidly descending scale. It also says who won.

Movement of the player is via *Procleft*, *-right*, *-up*, and *-down*. The main variables are *XM%* and *YM%* for the player's position, to which are added *XM1%* and *YM1%* to make it move. *XA%* and *YA%* are used for the alien's position, to which are added *XA1%* and *YA1%* for movement.

```
10*TV255
20MODE5
30VDU19,2,1210;
40PROCSTART
50VDU23,230,223,223,0,251,251,251,0,255
60VDU23,231,24,60,90,165,195,102,60,24
70VDU23,232,90,60,90,231,195,102,60,90
80VDU23,233,0,94,91,62,102,123,0,1
90VDU23,234,1,72,32,66,232,128,64,128
100VDU23,235,1,72,64,128,0,32,64,1
110COLOUR1
120PRINTSTRING$(20,CHR$230);
130FORA=1TO19
140PRINTTAB(0,A);CHR$230;TAB(19,A);CHR$230;
150NEXT
160PRINTSTRING$(20,CHR$230);
170FORB=0TO (14-D7*30)
180XX=RND(18)
190YZ=RND(19)
200PRINTTAB(XZ,YX);CHR$23
210NEXT
220XM%=1:XM1%=0:YM%=1:YM1%=0
230XA%=18:YA%=19:XA1%=0:YA1%=0
240COLOUR2:PRINTTAB(XM%,YM%);CHR$231
250COLOUR3:PRINTTAB(XA%,YA%);CHR$232;PRINTTAB(XA%,YA%-1);
260TIME=0
270REPEAT
280PROCTIME
290IF INKEY(-98) OR ADVAL(1) DIV 64 900 PROCLEFT
300IF INKEY(-67) OR ADVAL(1) DIV 64 200 PROCRIGHT
310IF INKEY(-88) OR ADVAL(2) DIV 64 900 PROCUP
320IF INKEY(-104) OR ADVAL(2) DIV 64 200 PROCDOWN
330PROCCHECK
340PROCALIEN
350UNTIL TIME 6000
360PROCDEATH
370DEFPROCRIGHT
380XM1%=XM1%+1 IF XM%+XM1%=19 THEN XM1%=0:ENDPROC
390IF POINT((XM%+XM1%)*64)+32,1024-(YM%+YM1%)*32)
1THEN GOTO48
```



```
400XM1%=XM1%+1:IF XM%+XM1%=19 OR XM%+XM1%=XA% AND YM%=
YA% THEN XM1%=0:ENDPROC
410IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)*32))
=1 THEN 400
420REPEAT COLOUR1: PRINTTAB(XM%+XM1%,YM%+YM1%);CHR$230
430XM1%=XM1%-1
440UNTIL XM1%=1
450PRINTTAB(XM%,YM%);" ":XM%=XM%+XM1%:YM%=YM%+YM1%:XM1%=
0:YM1%=0:COLOUR2:PRINTTAB(XM%,YM%);CHR$231
460PROCSOUND
470ENDPROC
480PRINTTAB(XM%,YM%);" ":XM%=XM%+XM1%:XM1%=0:YM%=YM%+YM1
%:YM1%=0:COLOUR2:PRINTTAB(XM%,YM%);CHR$231:
PROCSOUND:ENDPROC
490DEFPROCLEFT
500XM1%=XM1% 1
510IF XM%+XM1%=0 THEN XM1%=0 ENDPROC
520IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)*32))<>1
 THEN GOTO600
530XM1%=XM1% 1:IF XM%+XM1%=0 OR XM%+XM1%=XA% AND YM%=YA%
THEN XM1%=0:ENDPROC
540IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)*32))=1
THEN 530
550REPEAT COLOUR1:PRINTTAB(XM%+XM1%,YM%+YM1%);CHR$230
560XM1%=XM1%+1
570UNTIL XM1%=-1
580PRINTTAB(XM%,YM%);" "
590XM%=XM%+XM1%:YM%=YM%+YM1%:XM1%=0:YM1%=0:COLOUR2:PRINT
TAB(XM%,YM%);CHR$231:PROCSOUND:ENDPROC
600PRINTTAB(XM%,YM%);" ":XM%=XM%+XM1% YM%=YM%+YM1%:COLOUR2
:PRINTTAB(XM%,YM%);CHR$231:PROCSOUND XM1%=0:YM1%=0:ENDPROC
610DEFPROCUP
620YM1%=YM1%-1:IFYM%+YM1%=0 THEN YM1%=0:ENDPROC
630IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)
*32))<>1 THEN 710
640YM1%=YM1%-1:IF YM%+YM1%=0 OR YM%+YM1%=YA% AND XM%=XA%
THEN YM1%=0:ENDPROC
650IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)*32))=1
THEN 640
660REPEAT:COLOUR1:PRINTTAB(XM%+XM1%,YM%+YM1%);CHR$230
670YM1%=YM1%+1
680UNTIL YM1%=-1
690PRINTTAB(XM%,YM%);" "
700XM%=XM%+XM1%:YM%=YM%+YM1%:XM1%=0:YM1%=0:COLOUR2:PRINT
TAB(XM%,YM%);CHR$231:PROCSOUND:ENDPROC
710PRINTTAB(XM%,YM%);" ":XM%=XM%+XM1%:YM%=YM%+YM1%:XM1%=0:
YM1%=0:COLOUR2:PRINTTAB(XM%,YM%);CHR$231:PROCSOUND:ENDPROC
720DEFPROCDOWN
730YM1%=YM1%+1
740IF YM%+YM1%=20 THEN YM1%=0:ENDPROC
750IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)*32))<>1
THEN 830
760YM1%=YM1%+1:IF YM%+YM1%=20 OR YM%+YM1%=YA% AND XM%=
XA% THEN YM1%=0:ENDPROC
770IF POINT(((XM%+XM1%)*64)+32,1008-((YM%+YM1%)*32))=1
THEN 760
780REPEAT:COLOUR1:PRINTTAB(XM%+XM1%,YM%+YM1%);CHR$230
790YM1%=YM1%-1
800UNTIL YM1%=1
810PRINTTAB(XM%,YM%);" "
820XM%=XM%+XM1%:YM%=YM%+YM1%:XM1%=0:YM1%=0:COLOUR2:PRINT
TAB(XM%,YM%);CHR$231:PROCSOUND:ENDPROC
830PRINTTAB(XM%,YM%);" ":XM%=XM%+XM1% YM%=YM%+YM1%:XM1%=0
:YM1%=0:COLOUR2:PRINTTAB(XM%,YM%);CHR$231:PROCSOUND:
ENDPROC
840DEFPROCALIEN
850COLOUR3
860IF XM%=XA% AND YM%=YA% THEN PROCDEATH
870IF XM%>XA% THEN XA1%=XA1%+1 ELSE IF XM%<XA% THEN
XA1%=XA1%-1
880IF YM%>YA% THEN YA1%=YA1%+1 ELSE IF YM%<YA% THEN
YA1%=YA1%-1
890IF POINT(((XA%+XA1%)*64)+32,1008-((YA%+YA1%)*32))<>1
THEN PRINTTAB(XA%,YA%);" ":XA%=XA%+XA1%:YA%=YA%+YA1%:XA1%
=0:YA1%=0:PRINTTAB(XA
YA%);CHR$232:ENDPROC
900IF XA1%+YA1%=2 THEN XA1%=XA1%-1:GOTO940
910IF XA1%+YA1%=0 THEN XA1%=-XA1%:YA1%=-YA1%:GOTO940
920IF XA1%+YA1%=1 THEN XA1%=XA1%-1:YA1%=YA1% 1 GOTO940
930IF XA1%+YA1%=-2 THEN XA1%=XA1%+1:GOTO940
940IF POINT(((XA%+XA1%)*64)+32,1008-((YA%+YA1%)*32))<>1
THEN PRINTTAB(XA%,YA%)" " XA%=XA%+XA1%:YA%=YA%+YA1%:PRINT
TAB(XA%,YA%);CHR$232: A1%=0:YA1%=0:ENDPROC
950XA1%=0:YA1%=0
960JA%=RND(1):IF JA%>0.5 THEN XA1%=XA1%+1
970JB%=RND(1):IF JB%>0.5 THEN YA1%=YA1%+1
980IF POINT(((XA%+XA1%)*64)+32,1008-((YA%+YA1%)*32))<>1
THEN PRINTTAB(XA%,YA%)" ":XA%=XA%+XA1%:YA%=YA%+YA1%:PRINT
TAB(XA%,YA%);CHR$232:
A1%=0:YA1%=0 ENDPROC
990XA1%=0:YA1%=0:ENDPROC
1000DEFPROCDEATH
1010COLOUR2
1020FOR G=253 TO 49 STEP-4
1030SOUND 1,-15,G,1
1040NEXT
1050IF TIME>=6000 THEN XD%=XM%:YD%=YM%:GOTO1070
1060IF XM%=XA% AND YM%=YA% THEN XD%=XM%:YD%=YM% ELSE XD%
=XA%:YD%=YA%
1070PRINTTAB(XD%,YD%);CHR$233:FORT=0TO500:NEXT
1080PRINTTAB(XD%,YD%);CHR$234:FORT=0TO500:NEXT
1090PRINTTAB(XD%,YD%);CHR$235:FORT=0TO500:NEXT
1100IF TIME>=6000 THEN PRINTTAB(6,24);" YOU LOST":GOTO1120
1110IF XM%=XA% AND YM%=YA% THEN PRINTTAB(6,24);"YOU LOST
ELSE PRINTTAB(6,24);"YOU WON"
1120FORT=0TO3000:NEXT
1130*FX15,1
1140 RUN
1150ENDPROC
1160DEFPROCSOUND
1170SOUND 0,-15,241,1
1180ENDPROC
1190DEFPROCTIME
1200COLOUR2
1210PRINTTAB(3,21);"OXYGEN    ";TAB(10,21);60-INT(TIME/100)
1220VDU30
1230ENDPROC
1240DEFPROCCHECK
1250IF POINT(((XA%+1)*64)+32,1008-(YA%*32))<>1 THEN
ENDPROC
1260IF POINT(((XA%+1)*64)+32,1008-((YA%-1)*32))<>1 THEN
ENDPROC
1270IF POINT((XA%*64)+32,1008-((YA%-1)*32))<>1 THEN
ENDPROC
1280IF POINT(((XA%-1)*64)+32,1008-((YA%-1)*32))<>1 THEN
ENDPROC
1290IF POINT(((XA%-1)*64)+32,1008-(YA%*32))<>1 THEN
ENDPROC
1300IF POINT(((XA%-1)*64)+32,1008-((YA%+1)*32)) >1 THEN
ENDPROC
1310IF POINT((XA%*64)+32,1008-((YA%+1)*32))<>1 THEN
ENDPROC
1320IF POINT(((XA%+1)*64)+32,1008-((YA%+1)*32))<>1
THEN ENDPROC
1330PROCDEATH
1340ENDPROC
1350DEFPROCSTART
1360COLOUR129:COLOUR2:CLS:PRINTTAB(0,1);"      BRICKIE
1370PRINT " By Ian Ferguson"
1380PRINT''"   Use Joystick"
1390PRINT''"   Or use Keys"
1400PRINT'" Z = Left X = Right"
1410PRINT'" ; = Up   . = Down"
1420PRINT'" You ";CHR$231;" must push the";
1430PRINT'" Bricks ";CHR$230;" to block"
1440PRINT " Spike ";CHR$232;" in ."
1450PRINT''"You have 60 seconds"
1460PRINT "       to do it'"
1470PRINT''"Difficulty level"
1480INPUT TAB(18,24);D%
1490IF D%<1 OR D%>3 THEN PRINTTAB(19,24);" ":GOTO1480
1500PRINT''" <SPACE> To Start"
1510A$=GET$
1520IF A$<>" " THEN GOTO1510
1530COLOUR128:CLS
1540ENDPROC
```

Chicago top ten

***David Kelly** looks at the new software on show at CES in Chicago*

Looking at the new software on parade at CES it is clear that games still rule the roost

The predicted upsurge of serious' applications packages for home micros has taken place, but to a much lesser extent than expected The 'zap' game is now well and truly dead and the emphasis is on graphics cartoon type animation, simulation and adventure games

And some of the results are breathtaking In a moment I shall select a personal top ten from the show, but first some of the other highlights

To start with the hardware manufacturers Atari showed its first products from its agreement with Lucasfilm — two titles *Ballblazer* and *Rescue on Fractalus* Sad to say neither proved to be earth shattering Atari previewed its latest collaboration with Lucas cohort Steven Spielberg — a game based on the latest Spielberg-produced film, *Gremlins*

Finally from Atari, a real weirdy The Mindlink System Mindlink is a combined headband and infra red transmitter linked to a receiver connected to the computer Using special software a game can be controlled with the headband instead of joystick — just by tensing and relaxing the muscles in the forehead The system will cost around $80 and be launched in September

Attention at the Commodore stand focussed on the hardware — the Plus/4, 16 and the new disc drive and printer But there were one or two interesting pieces of software on show — most notably *The Hulk* — a joint venture with Scot Adams, Adventure International and Marvel Comics, and *Just Imagine*

Romox, the electronic software distribution system launched in a blaze of publicity a year ago — and taken up by Prism in the UK — seems to be floundering After test marketing in 20 stores last October, it still has yet to be launched in final form

Which brings us to the independent software houses At first sight the US houses seem much more developed than the British ones They all had extravagant stands Electronic Arts, for example — a comparative newcomer to the US scene — had a glittering white edifice with a huge Greek pillared portico It is only on closer inspection that it becomes obvious that the companies are every bit as disorganized as their UK counterparts The difference is only that the American houses are all set up with venture capital backing — big bucks

Unlike the British companies, the US houses have for the most part gained their backing at the expense of losing control to the guys in the grey suits

Looking at the US houses in no particular order

Infocom was disappointing One point of interest, though — all its titles will shortly be available for the Apple Mackintosh

Sierra announced an agreement with Disney to develop four educational games featuring the Disney characters First out will be *Donald Duck's Bakery* for Apple and C64 Then comes *Winnie the Pooh Lost in the 100 Acre Woods* The second *BC and the Wizard of Id* game was on show — *Grog's Revenge* Also a clever boxing simulation — *Championship Boxing* Choose from 50 boxers to play the computer or a friend Or, design your own boxer Set your strategy for each round and watch the outcome, or play each round blow by blow All for the Apple II and C64 *Grog's Revenge* also for the Atari, Adam and IBM

Broderbund showed some first class material and appeared to be one of the more organized of the American houses Nearly all their material is for the Apple II though

Electronic Arts showed a basket ball simulation — *One-on One* — for the Apple with Atari and C64 to follow soon *Financial Cookbook* presented a new twist to home finance — DIY recipes for success — for the Apple II, IBM, C64 and Atari

Spinnaker is spreading into bookware Windham Classics — a new division of the company — has developed graphic and text adventures based on classic children's stories — *Swiss Family Robinson*, *Wizard of Oz*, *Gulliver's Travels* *Treasure Island* and *Wind in the Willows* All will be available later this year for the Apple II Commodore, Atari and IBM machines

Yet another new division of Spinnaker is Trillium which is developing software based on science fiction titles by well known authors — either published or soon to be published. These include *Rendezvous with Rama* by Arthur C Clarke *Fahrenheit 451* by Ray Bradbury and *Amazon* by Michael Crichton These titles are on disc for the Apple II and Commodore 64

Imagic is another company moving into software based on well known works of fiction it has adventures based on H G Wells' *Time Machine* R A MacAvoy's *Damiano Trilogy* set in 15C Italy and Conan Doyle's *Sherlock Holmes* books Where the Sherlock Holmes title leaves Melbourne House which has announced a similar idea is not clear These titles are available in October/November for the Apple II IBM and C64

Parker showed *007 James Bond* for the C64 and Atari *Montezuma's Revenge* — rather like *Manic Miner* — and *Frogger II Three Deep* (a C64 cartridge) featuring 'Sega's fearless amphibian!'

Activision's new products were rather disappointing The company concentrated on getting its Atari titles across to the C64 with 12 titles for the Commodore machine Activision also announced a distribution and marketing agreement with an interesting Santa Barbara-based house — Gamestar Gamestar specialises in sport simulations for the C64 Atari and Apple II

CBS appeared to be making a big push into the software market — good quality material, often with an educational twist

Other companies of interest included Datasoft, HesWare (which sells Jeff Minter's titles in the US), First Star, Mindscape, Creative and Random House (with a range of educa

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CES is not just about computers The whole field of consumer electronics is represented

A number of themes are being hotly pursued — stereo video with hi-fi sound is going to be big. Cellular radio is very much in evidence At least 25 companies demonstrated low-cost transportable satellite receiving stations One dish was only 18 inches across Canon showed a video editing machine for home use Pioneer made a lot of noise with its high quality laser disc video juke box All the major electronics companies were pushing Compact Disc records for all they are worth Coleco showed Private Call — a personal telephone for kids which [illegible] the numbers of the most important people in your life — it can be locked up, keeping your secrets safe Robots seemed less interesting this year Hubot includes a built in radio and cassette player — for $3495 (over £2000)

And so to the star of the show On the Hatton stand Seiko showed its pocket colour tv The device features a very high quality true flat screen liquid crystal display and is about the size of an ordinary paperback It beats the Sinclair flat screen tv out of sight it costs $550 (around £400) but prices are bound to fall It would appear Sinclair made a mistake to go for a conventional tube in his device Liquid crystal is better

tional titles featuring the Peanuts cartoon characters)

So what about the UK software houses at CES? All in all it was a dismal showing Only Quicksilva/Virgin and Mastertronic took stands Virgin's *Falcon Patrol* was selected by the CES organisers as one of the top 100 titles at the show Quicksilva also attempted to hold a press breakfast to launch new titles — but it didn't entirely go as planned Rod Cousens didn't make it, the video presentation was delayed because the video cassette proved to be incompatible with the recorder and the 1920s bus specially hired to take people from the breakfast to the show broke down

Aside from QS/Virgin nobody else had the nerve or resources to challenge the US houses A goodly number of UK people were skulking round the show, though

And so to my top Ten

10 *The Hulk* Straight in at number 10! This is the first in the Questprobe/Scot Adams adventures featuring the Marvel comic book heroes *The Hulk* is a graphic adventure released in collaboration with Commodore for the C64 and Plus/4 Nice graphics

9 *King's Quest* Another adventure, this time from Sierra. What makes King's Quest special is that it is animated You move the hero, Sir Grahame, through the adventure using a joystick There is also text input Use of the joystick adds another dimension with arcade-like fights and you have to be careful when moving around the screen not to make mistakes like falling into the river Dozens of locations Memory problems mean this is only for 128K Apple IIs and the IBM PC Nevertheless, it is a pointer towards the sort of things which could be available on the QL, for example

8 *Dinosaur Dig* An educational program from CBS (written by Neosoft) As one buyer at CES commented "Educational software is great — it just doesn't sell " He may be right, but *Dinosaur Dig* is a fascination program It animates each of the dinosaurs, shows how they lived and shows maps together with how conditions changed and made them extinct For the Apple II, IBM and C64, all on disc

7 *Dallas Quest* From Datasoft What can one say? Sue Ellen hires you as the best detective in Texas to find the map of the oil fields so she can gain independence from JR Great adventure, great graphics I tried to shoot the cat — all that happened was a flag appeared which said 'Bang' Apple II, Atari, C64, IBM PC

6 *Spy v Spy* An arcade game from First Star, based on the zany Mad comic cartoon strip The game is for one player against the computer or two players You are trying to escape from the embassy with the plans, money, airline tickets and passport The snag is, so is the other guy You can plant bombs behind cupboards and in safes, though, to deter your opponent Twenty rooms C64 and Apple II

5 *JVC Golf* For the JVC MSX micro No indication of availability One of two JVC games which links the JVC VHD BD 7550 video disc player to the computer giving real video footage in a game You choose the iron and the strength and direction of shot, and then you get to see how you did on a real golf course, with real players and spectators

4 *Summer Games* From Epyx Every self-respecting software house showed an Olympics game and this was arguably the best *Summer Games* for the C64 features eight different events — including running, pole vaulting, swimming diving, shooting and gymnastics Epyx has been caught somewhat on the hop by recent events and is now having to promote *Summer Games* as the games the Russians *did* attend The flag is definitely in there Watch out for a rash of Olympics programs in the UK

3 *The House that Jill Built* from CBS (written by Joyce Hakansson Associates) for the Apple II and C64 both on disc Another popular type of program at the show It allows you to fit together your perfect dwelling from a series of pictorial menues with the help of a joystick. Each piece is selected, coloured and moved into place Other titles with a similar theme included Epyx's C64 *Barbie's Boutique* based on the Barbie doll character which you have to dress up and another is *Just Imagine* from Commodore for the C64 and Plus/4 with a choice of backdrop (jungle, western etc) which you can populate with animals and people Commodore's title includes trivia, too — did you know that the fastest growing animal is the blue whale?

2 *The Ugly Duckling* Software Movies has seemingly an entirely new idea here On the Atari they have cleverly linked a voice/effects track to software running on screen using a synchronisation pulse What this means is that characters can actually be made to speak, moving their lips in sync with the voice from the other stereo track The effect is remarkable and is genuinely a step nearer to software movies The company has it working on the Atari and will shortly announce titles for the C64

1 *Karateka* from Broderbund for the Apple II Tremendous graphics in a great arcade game This is a martial arts fighting game A succession of adversaries are sent at you and each must be beaten with the fast reaction punches and kicks of a kung fu hero All this with some of the best animation yet seen A beautiful piece of programming with compelling gameplay The title is rumoured to have been licenced for the UK machines by Quicksilva

Summer Games from Epyx

Dallas Quest from Datasoft.

Karateka from Broderbund



A fine day for tennis on your Spectrum

This is Wimbledon.

The home of British tennis, enjoying Britain's fine weather.

But this summer things will be different. If rain stops play on court, you'll be able to carry on playing – with Sinclair's 'Match Point'.

'Match Point' is one of six new all-action programs for your Spectrum. It lets you play tennis against the computer, a friend, or just sit back and watch an exhibition match.

Enjoy all the features of tennis – backhand and forehand shots, lobs, drop-shots, volleys, a scoreboard... even ball boys are on-call.

But good tennis strokes aren't everything. To win the Match Point Open Championship you'll need skill *and* tactics.

Luckily, though, you won't have to rely on the weather!

'Match Point' has been developed by Psion, one of the UK's top software houses.

You'll find it alongside Sinclair's other new titles – Stop the Express, Bubble Buster, Zipper Flipper, Eric and the Floaters and Driller Tanks – in the shops, today.

At £7.95, it's a real winner!

Selected Sinclair software lines are available from WH Smith computer stores, larger branches of Boots, John Menzies, Greens and most other software stockists nationwide.

Sinclair Research Ltd. Camberley (0276) 685311

sinclair

Galaxy of stars

Here's your opportunity to have a Planetarium in your own home.

Considering there is no sound involved in this program and the only visual display could be interpreted as "white dots on a blackground", I found *Constellation* to be one of the most fascinating progams for a computer I have seen. Superior Software's *Constellation* allows you to view the stars from any point and at any time on the Earth. You are asked for the latitude and longitude of your position, the month and date and the Greenwich mean time you wish to view. From then on the sky truly is the limit.

Your telescope can be elevate up, down, left and right. It can even zoom in on particular constellation. If you don't recognise the star formations you are viewing, you can switch to a display where each constellation is shown by letter formation.

Quite honestly, it was the sheer complexity of the program itself that I found most fascinating. Here is a marvelous use of a home computer which doesn't involve fast action or killing or brilliant colour, normally associated with software. It's both educational and absorbing, whilst giving you the opportunity to see "The Sky at Night" at any time.

Fred Short

Program *Constellation* **Price** £6.95 **Micro** Electron **Supplier** Superior Software, Regent House, Skinner Lane, Leeds 7.

Player v player

Program Power have converted their popular version of *Chess*, for the Electron. This computer version of *Chess* must rank amongst the best, both for display and playing power. Once the game is loaded you are offered nine options, plus player versus player, player versus computer or computer versus computer. You can analyse your move, choose a fixed time limit after which you forfeit your move, continue a game after it has been re-loaded from tape, modify the display colours, choose from nine levels of play (level nine taking up to two hours for the computer to make its move), or replay a previous game. Such options do not allow you to play an expert game of *Chess* but do put the facilities of the computer to full use, thus making for more enjoyable play.

Personally I find computer chess both enjoyable and frustrating: enjoyable to be able to choose the ability of your opponent but frustrating to find an opponent almost infallible. I am very pleased however to find a good game of *Chess* for what is still a relatively new computer to the market.

Fred Short

Program *Chess* **Price** £7.95 **Micro** Electron **Supplier** Micro Power Ltd, 8/8a Regent Street, Chapel Allerton, Leeds LS7 4PE.

Cloud of dirt

Slinky is a sort of cousin of *Qbert*.

You have to hop Slinky (which looks like the toy of the same name — a metal coil which can climb up and down steps) around a pile of coloured cubes, the tops of which change colour when Slinky lands on them. Only when all the cubes have changed colour can you go on to the next level.

However, the game is not as simple as that. There's a cloud of dirt — well that's what it looks like — which occasionally floats across the screen and this causes Slinky problems. A magnet sometimes appears which can pick Slinky up and unceremoniously drop it off the edge of the cubes, losing you one of your five lives. At some of the higher levels the cubes can change colour back and forth each time Slinky lands on them which makes planning your moves pretty tricky. Later on still other characters appear and the action speeds up making an already quite difficult game almost impossible.

Although the idea of the game is far from new, this is an enjoyable variation which requires both sharp reactions and good planning.

Richard Corfield

Program *Slinky* **Price** £12.95 (disc) £8.95 (cassette) **Micro** Commodore 64 **Supplier** Audiogenic, PO Box 88, Reading, Berks.

Life or death

It is refreshing to see British software on the market for the Atari computers as the Americans seem to have dominated this machine. A new Atari house to appear is System 3 software of London, which has just released a title called *Colony 7*.

Imagine yourself at the controls of an ADV (armoured defence vehicle) on which is mounted a device capable of delivering instant death to marauding pirates. You are just protecting the colony's food supplies when all of a sudden pirates zoom down from the heavens. It is now a matter of life or death to protect the food supplies.

Sounds familiar? The old blast-them-up-with-no-way-to-win complex? You guessed it. This game entails no more than dodging bombs (slow ones at that!), blasting aliens (crude player missile graphics) and protecting 24 canisters (12 either side of the screen). On the plus side the background graphics are quite good. Done in Graphics Mode 9 they give a true impression of 3-D.

The game itself, unfortunately, is nothing special. The pirates move too fast to hit (unless you're lucky!) and their bombs fall far too slowly. If you are shot on your first life you have to wait until the pirates have carried off the last of the food cannisters until you are allowed to have another game — an unnecessary and frustrating pause. Also there is no high score feature, only one player is allowed and there are no skill options.

The program itself is only about 6K long, the rest being taken up by the screen data.

All in all I found this game rather uninteresting and would much rather play *Xenon Raid*, by English Software. However I am sure System 3's obvious graphic-creating talents will be used to better effect.

Gary Radburn

Program *Colony 7* **Price** £9.95 **Micro** Atari 400/800/XL **Supplier** System 3 Software, 10 Marshalsea Road, London SE1 1HL.

Freezing

Pengi is an ingenious combination of existing games ideas in which a monster-maze chase (eg Snapper type game) is mixed in with a (literally) sliding block puzzle. The central character in the game is an agreeable little penguin who having been locked in a freezer attempts to rearrange its contents, namely blocks of ice, whilst avoiding the freezer's other inhabitants, the snow bees. The ice blocks are slid around with the aid of a hefty kick from the penguin, or alternatively may be selectively melted. Actually given my frenzied activities whilst attempting to out-manoeuvre the bees indiscriminately melted might be more apt.

The game comprises elements of skill in controlling the movements of Pengi, and strategy avoiding the snow bees whilst at the same time trying to line up the special diamond ice blocks. In addition, those seeking gratuitous violence are satisfied by attempting to crush the snow bees beneath the moving blocks of ice or alternatively stomping them, having first stunned them using an electrified fence which surrounds the freezer. This too requires activating by means of a swift kick from Pengi.

The games high quality graphics and excellent sound provide a most pleasing overall effect generally comparable with other versions eg Postern's *Pengwyn* in this respect.

Simon Wilson

Program *Pengi* **Price** £5.95 **Micro** BBC **Supplier** Visions, 1 Bellington Street, Liverpool L17 7AD

Quick sort

The market for Spectrum database programs is a tough one, dominated by *Master File* with *Vu-File* in a good second place. *Multifile* fails to get near these two programs in any of the areas that really matter.

The library case contains the program tape (which I found quite difficult to load) and a blank tape for recording data. There is also a short instruction book. The program is written in Basic which means that it is very slow at times: sorting the file into order (using "a very advanced sorting algorithm called 'Quick Sort'") takes about two minutes! You are limited to ten data fields of no more than 19 characters and one display format, and because the program uses fixed length fields in an array (rather than a data compression technique) you can have no more than 105 records.

The program does contain a form of security coding but even a beginner would not find it difficult to penetrate this: the program is not even break protected. There is a *Clone* function unique to *Multifile*, which will copy a particular data field from one record onto a given number of others, but this does little that could not be achieved using the *Copy* facilities of *Vu-File* or *Masterfile*. There is no microdrive compatibility built in, nor any advice about this in the manual, though the program would be straightforward to convert for microdrive use. Free membership of a users club and a telephone 'Hot-Line' don't make up for the deficiencies in the program.

In short, this program is not one I'd recommend: either of the front runners offers better facilities and value for money.

Simon Springett

Program Multifile **Price** £9.95 **Micro** Spectrum **Supplier** ISP Marketing, Crown House, 386 High Street, Godalming, Surrey

Flexible system

Author is a versatile word processor from Tansoft, written by John Dawson. The program loaded first time, at the fast baud rate, on both the Atmos and Oric-1, as did all the tape operations within the program.

It starts with a menu of major commands which cover the three main activities: writing and editing, saving and retrieving, and printing text. Oric's message line at the top of the screen is used by *Author* as a reminder of the command in force, what input is expected and how to exit from it. Selection of the major commands is made by using the initial letter of the command. It may take four or five sessions to master the full capabilities of the editor, but the comprehensive 3[illegible] page manual leads you gently into using *Author*.

I would rather the Move command which relocates sections of text was a *Copy* command so that repetitive text may be easily entered. I also found that as a poor typist frequent switching between *Write* and *Edit* modes became tiresome.

The printer installation table, printer macros and the ability to include printer control codes within the text makes *Author* a very flexible system that can cope with any printer capable of being attached to the Oric printer port.

Vic Fielder

Program Author **Price** £14.50 **Micro** Oric, Atmos **Supplier** Tansoft, Units 1 & 2 Cambridge Techno Park, Newmarket Road, Cambridge CB5 8PB

Pot black

The potential of a computer for playing games would seem to know no bounds. It has become well established as an admirable opponent in Chess, and not quite so well known for such games as Draughts, Othello, and Four-in-a-row.

However, for games requiring a greater degree of physical participation, I was not so sure that the computer had much to offer. Therefore when I saw Vision's *Snooker* I was not very optimistic.

I was mistaken. Having loaded up the tape, two hours later I was hooked. Not, I hasten to add, on playing snooker on a computer, more, learning to use a computer to play a type of snooker — a big difference.

I was fascinated how near to the real thing this was and especially how all the colours of the balls could be shown very nearly exact. The cue is replaced by a movable cross, yet the game allows a variety of shots, including putting spin on the cue ball and determining the strength of the shot. You can decide to play solo or with a partner and to have a 15 or 10 ball game.

Having been sceptical to begin with, I ended up being fascinated both by the computer's interpretation of snooker and my own keenness to want to play.

Fred Short

Program Snooker **Price** £8.95 **Micro** Acorn Electron **Supplier** Vision (Software Factory) Ltd, 1 Felgate Mews, Studland, St., W6 9JT

An electric effect

***Alan Want** presents a simple program for the 16 or 48K machine that keeps track of gas and electricity bills*

This program was written with two aims in mind, firstly to allow a regular check on the use of electricity and gas within my home presenting a weekly cost of both items to allow budgeting, and secondly as a demonstration of the way in which a computer can be used to present the same data in various forms

Gas and electric meter readings are entered for each week together with any changes in price The user can then present this information as a Line Graph showing every week s use as a Bar Graph showing the use for the current year or as a week by week list with details of useage — cost and % change from previous week or year

The program is written as a series of subroutines so that it can be adapted and altered to suit other uses The main data is stored in array *B(x,y,z)* where

a2x = Week (160 in 48K 105 in 16K)

x = 1 = Electric
y = 2 = Gas

z = 1 = Units Used
z = 2 = Cost

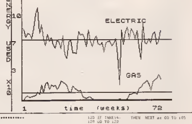
The last entry position is stored in variable *Last* ie, *B(LAST,1,1)* = Units of Electric used in last week entered

Notes:

100 Main Menu and Selection. Selection is made by pressing the space key until required option is highlighted and then pressing Enter
500 Save Program with Data
1000 Draw axis and scale accordingly on entry MAX should hold maximum value to be plotted This routine will then return 2 variables — SCALE — data to be plotted will be multiplied by this figure to ensure plot stays on screen and — APART — distance apart points should be plotted to fill x scale (plotting 1 to LAST)
3000 Plot Line Graph
4000 Work out average use of Electric and Gas.
5000 Print list to screen or printer Note, in first year shows % change from last week in subsequent years % change from previous year
6000 Input Weekly Meter Readings. Entering a 0 for Electric reading will return to main menu.
7000 Change Prices Electric is entered as pence per unit, and gas as pence per Therm and Calorific Value, this is converted to a price per unit (All figures can be found on the appropriate bill) Figures in Line 9496 for initial settings are the current figures for Eastern Region.
8000 Bar Graph Shows use and averages for current year
9000 Re-entry point after break or on loading
9990 Initialise and Clear data. Only used normally on first run.

NB 16K users must omit all Rems and Line 8015, and change Line 9991 as indicated To save memory, variable *l* is used for 1, and *t* for 2 throughout the program

Up to two years data can be entered on the 16K version and three years on 48K although this can be increased by altering line 9990 and adding checks for subsequent years, after line 8015




```
1 REM ************************
2 REM        ENERGY
3 REM ALAN D  WENT APRIL 1984
4 REM 13 Lucy Close Stanway  Colchester
5 REM ************************
7 REM
10 DEF FN a$(A,B)=STR$ ((B-A) A*100)+
15 REM
20 REM B(A,1,1) ELECTRIC USED
   B(X 1,2)= COST OF ELECTRIC
21 REM B(X 2,1)=GAS USED     B(X 2,2)= COST OF GAS
30 REM RUN 9990 ON FIRST USE
40 REM USE GOTO 9000 TO RE-COMMENCE AFTER A BREAK
90 REM MAIN MENU
100 CLS   PRINT AT 0,10; ENERGY
104 PRINT #1; SPACE = Select; ENTER   accept
105 FOR A=1 TO 14 STEP 1
110 PRINT AT 4,0; ENTER WEEKLY FIGURES
      LIST FIGURES (Screen)     LIS
    T FIGURES (Printer)    LINE GRAPH     BAR GRAPH
115 PRINT   ADJUST PRICES              SAVE DATA
120 PRINT  OVER 1; BRIGHT 1,AT a+t,0;      ----------
122 IF INKEY$=CHR$ 13 THEN  GO TO 130
125 IF INKEY$=     THEN  NEXT a: GO TO 105
128 GO TO 122
130 RESTORE : CLS : FOR B=1 TO A/t. READ C:
    NEXT B: GO SUB C: GO TO 100
140 DATA 6000,5000-4530,3000,8000 7000,500
500 REM SAVE
510 SAVE  ENERGY  LINE 9000: GO TO 100
1000 CLS : REM draw axis
1005 PRINT  BRIGHT 1;AT 0 5; YOUR ADDRESS HERE
1010 LET apart=INT (221/last)
1020 IF apart=1 THEN  LET apart=1 4
1030 PLOT 24 16: DRAW 230,0
1040 PLOT 24 15: DRAW 230,0
1050 PLOT 24,16: DRAW 0 158
1060 PRINT AT 21,3; 1        time  (weeks)
1065 LET scale=158/max: PRINT AT 0,1;INT
     (max/10);AT 4,1;INT (max/15);AT 9
     ,1;INT (max/20);AT 14,1;INT (max/40)
1070 FOR A=1 TO 20: PRINT AT A 0;B$(A): NEXT A
1075 PLOT 8,0: DRAW 0,175
1080 REM  LET D=0: FOR A=19 TO 0 STEP  1:
     PRINT AT A,1;INT (D/10): LET D=D+16: NEXT A
```

```
1990 PRINT BRIGHT 1;AT 5,19; ELECTRIC ;AT 15,23;
     GAS ": RETURN
2990 REM ************************
2995 REM     LINE GRAPH
2999 REM ************************
3000 GO SUB 1000: PRINT AT 21,20;LAST: PLOT 24,
     (a(1,1,1)*scale)+16
3010 FOR a=2 TO last: DRAW apart,(a(a,1,1)-a
     (a-1,1,1))*scale: NEXT a
3020 PLOT 24,(b(1,1,1)*scale)+16: FOR a=1 TO last:
     DRAW apart,(b(a,1,1)-b(a-1,1,1))*scale: NEXT a
3030 GO SUB 4000: PLOT 24,electric*scale+16:
     DRAW 230,0: PLOT 24 gas*scale+16: DRAW 230,0
3040 PRINT £1; C = COPY : OTHER = MENU
3050 IF INKEY$="" THEN GO TO 3050
3060 IF INKEY$="C" OR INKEY$="c" THEN COPY
3070 OVER 0: INK 0: PAPER 7: CLS : RETURN
4000 REM average use
4010 LET electric=0: LET gas=0
4020 FOR a=1 TO last: LET electric=electric+b
     (a,1,1): LET gas=gas+b(a,1,1): NEXT a
4030 LET electric=INT (electric/last*10)/10:
     LET gas=INT (gas/last*10)/10: RETURN
4950 REM ************************
4960 REM   PRINT OUT LIST
4970 REM ************************
4990 OPEN £1, "p"
5000 CLS
5005 LET I$=""
5010 PRINT BRIGHT 1; WK     Electric        Gas
5015 PRINT BRIGHT 1;     Graphic Ause
     Change Graphic Ause    Change"
5020 FOR a=1 TO last: PRINT a;TAB 3;"Graphic A";
     a(a,1,1);TAB 8;b(a,1,1);
5022 IF a>1 THEN IF a(a,1,1)=0 OR a(a-1,1,1)=0
     THEN GO TO 5040
5025 IF a/52 THEN LET I$=FN A$(B(A-52,1,1),
     B(A,1,1)) TO 6): IF VAL I$>=0
     THEN LET I$="+"+I$: GO TO 5035
5030 IF A>1 THEN LET I$=FN A$(B(A-1,1,1),B(A,1,1))
     ( TO 6): IF VAL I$>=0 THEN LET I$="+"+I$
5035 LET I$=I$( TO 4)+"%" : PRINT TAB 13;I$;
5040 PRINT TAB 18; Graphic A ;b(a,1,1);TAB 22;
     b(a,1,1);
5041 IF a>1 THEN IF b(a,1,1)=0 OR b(a-1,1,1)=0
     THEN PRINT : NEXT a: GO TO 5080
5045 IF a>52 THEN LET I$=FN A$(B(A-1,1,1),B(A,1,1))
     ( TO 6): IF VAL I$>=0
     THEN LET I$="+"+I$: GO TO 5060
5050 IF A>1 THEN LET I$=FN A$(B(A-1,1,1),B(A,1,1))
     ( TO 6): IF VAL I$>=0 THEN LET I$="+"+I$
5060 LET I$=I$( TO 4)+"%": PRINT TAB 27;I$
5070 NEXT A
5080 GO SUB 4000: PRINT Average Use: per Week:-
     Electric ,INT (electric*eprice*100)/100;
     ( ;electric, Units) Gas ;INT
     (gas*gprice*100)/100;   ( ,gas, Units)
5085 CLOSE £1
5090 INPUT ENTER FOR MENU ;A$: CLS : RETURN
5999 REM ************************
6000 REM Input Weekly Figs.
6001 REM ************************
6010 PRINT  Last Entries   Electric Meter  ;em;
     Gas  ;gm
6020 PRINT  Week No.  ;last+1: INPUT  Electric Meter-
     (0=END) ;a: IF a=0 THEN CLS : RETURN
6030 LET f=a-em:
6040 PRINT "Electric Usage= ;f;  Meter  ;a:
     INPUT  Gas Meter ;b: LET g=
     b-gm: PRINT   Gas = ;g;  Meter = ;b
6050 INPUT "Correct? (Y OR N) ";c$
6060 IF c$="Y" OR c$="y" THEN LET last=last+1:
     LET b(last,1,1)=f: LET b(last,1,1)=INT
     (f*eprice*100)/100: LET b(last,1,1)=g: LET b
     (last,1,1)=INT (g*gprice*100)/100:
     LET em=a: LET gm=b
6065 IF f>max THEN LET max=f
6066 IF g>max THEN LET max=g
6070 GO TO 6020
6999 REM ************************
7000 REM SET PRICES
7001 REM ************************
7010 CLS : PRINT  ADJUST PRICES"
7015 PRINT £1; SPACE = Select: ENTER = accept
7020 FOR a=1 TO 8 STEP 1
7025 PRINT AT 3,0; No Changes   Electric price per Un
     it = ;eprice*100; p"
7030 PRINT  "Gas price per therm     = ;pin; p
7040 PRINT   Calorific Val (Mcal/ft)= ;Cal
7050 PRINT      (Gas per Unit = ;gprice*100; p)
7060 PRINT  OVER 1; BRIGHT 1;AT a*1,0; . . . -- ------
7070 IF INKEY$="" THEN GO TO 7070
7080 IF INKEY$=CHR$ 13 THEN GO TO 7100
7090 IF INKEY$="   THEN NEXT a: GO TO 7020
7100 IF a=1 THEN RETURN
7110 IF a=3 THEN INPUT  New Price (pence per Unit)
     ;e: LET eprice=e/100: GO TO 7000
7120 IF a=5 THEN INPUT  New Gas Price pence per
     Therm  ;pin: GO SUB 7500: GO TO 7000
7130 IF a=7 THEN INPUT  New Calorific Value  ;
     Cal: GO SUB 7500: GO TO 7000
7500 LET gprice=((Cal/1000)*pin)/100: RETURN
7970 REM ************************
7980 REM BAR GRAPH (CURRENT YEAR)
7990 REM ************************
8000 GO SUB 1000: PLOT 23,15: DRAW 231,0:
     PLOT 23,15: DRAW 0,159
8010 LET year=0: IF last>104 THEN
     LET year=104: GO TO 8020
8015 IF last>5  THEN LET year=52
8020 PRINT AT 1,20; YEAR ;INT (YEAR/52)+1
8030 INK 1: FOR A=4 TO 200 STEP 4: FOR B=1 TO 1:
     PLOT 24+A+B, 16: DRAW 0,B((A/4)+year,1,1)
     *scale: NEXT B: NEXT A
8040 FOR A=4 TO 200 STEP 4: FOR B=2 TO 4:
     PLOT 24+A+B, 16: DRAW 0,B((A/4)
     +year,1,1)*scale: NEXT B: NEXT A
8050 GO SUB 4000: PLOT 24 electric*scale+16:
     DRAW 230 0: PLOT 24 gas*scale+16: DRAW 230,0
8060 GO TO 3040
9000 REM ************************
9001 REM      RESTART POINT
9002 REM ************************
9005 FOR n=0 TO 7: POKE USR "A"+n,  : NEXT n
9010 LET B$= MEMORY USED  X:0       GO TO 100
9970 REM ************************
9975 REM INITIALISE AND START
9980 REM ************************
9990 DIM b(160,2,2): LET last=0
9991 REM for 16K machine DIM A(105,2,2)
9995 INPUT   Starting Electric Meter Reading ;em:
     PRINT  Electric Meter = ;em: INPUT "Starting
     Gas Meter Reading ;gm: PRINT  Gas Meter
     Reading  ; gm: INPUT  Correct? (Y or N) ;
     LINE a$: IF a$   Y  AND a$   y  THEN GO T
     O 9995
9996 LET gprice=.362: LET cal=1022:
     LET pin=35.2: LET eprice=.485
9997 LET s=1: LET t=2: LET max=150
9999 GO TO 3000
```

Calculating frame

***Malcolm Davison** concludes his review of the Psion QL packages with a look at Abacus*

Of the four QL application packages, the one I enjoy using the most is *Abacus*. This is a splendid addition to any software library particularly since it is an integral part of a matching and inter-communicating set of business software.

With an outline knowledge of the use of just eight commands (in addition to the *Print* and *File* commands) the complete novice should be able to create spreadsheets for the majority of applications, without continually referring to the manual.

Psion has added some nice touches — a label feature allows any text entered on the spreadsheet to be used as a column or row identification. Text handling is improved to such an extent that the concept of a spreadsheet being used for just calculation has to be reconsidered. Text sorting, substretch search, justification, comparison, a repeat function to duplicate a character across a number of character positions and data entry make this ideal for tabular information.

The program allows you to key in text that is wider than the column width and will allow the text to run over the number of columns it needs. This is an advantage over *Visicalc*, which insists that you move the cursor to the next cell before continuing the text entry.

Repetitive layouts

One of the advantages of a spreadsheet over word processors is the ability to alter a layout of text and figures. Areas of text and numbers may be moved, duplicated or deleted, while additional columns or rows of information can easily be added or removed. The *Copy* command simply moves blocks of cells to a specified location, while *Echo* continues a theme set in a single cell in a whole row or column. These commands make the creation of repetitive layouts very straightforward. All cell references are automatically updated as the amendments are incorporated — the number of calculations to add a blank column in the middle of a spreadsheet can be large and yet the user is hardly aware of how busy the program can be on the most trivial amendment.

The commands *Unit, Justify* and *Grid* give the user a very high degree of control over the final appearance of the spreadsheet. Both text and numbers can be right, centre or left justified simply by specifying the initial letters *R, C* or *L*. The only problem is if you right justify or centre headings for neatness you then cannot use them as row or column labels.

The *Grid* command allows you to add or delete rows or columns and to affect column width over a specified range. The *Unit* command offers a simple way to offer an useful range of numeric formats.

Accountants will be pleased to have both a percent option, and a pound sign option. For those who deal in thousands of pounds, there is an option to display integers, that is whole numbers with no decimal places. They will also welcome the inclusion of Net Present Value and Internal Rate of Return.

One feature lacking is the facility to execute a series of spreadsheet merges unber "program control". Also corporate planners might want to know what the maximum size of sheet is that the memory.

A wide range of functions are offered. You can count, sum, average and find the maximum and the minimum of any range of cells. A number of mathematical and scientific options are catered for, including determining the sum, the square root and the numeric value of a string and turning numeric data to a string. Logarithms, sines, cosines, tangents, the angle in radians from a tangent quotient, converting degrees to radians, finding the value of pi and establishing the sign of a numeric value are also available.

I had fun working out the number of days to Christmas using the *Days* function, which returns the number of days from 1 January 1583, the start of the Gregorian calendar. A month name will be returned using the function *Month*, given a numeric value of one to twelve. When the system clock has been set, you can also establish the time, which can be added to your listing.

For those familiar with programming concepts, the *IF* statement offers a powerful logical analysis option. This further complemented by an option to input data at run-time using ***ASKN*** or ***ASKT***, depending on whether the data is numeric or text. So, a simple turn-key system can be evolved to solve particular problems.

The window feature allows the user to compare the contents of one area of a spreadsheet with another, which might otherwise be off the screen—the two areas can pan along together, or one can remain in a fixed position. This feature will only allow the cursor to move within one portion of the spreadsheet and is locked out of the other, which is an annoying hindrance.

It was a disappointment to me that you could not protect the cells from inadvertent keyed entry and that there was no facility to remove the grid border from the screen — which by the writer's own efforts can be made redundant through using the text referencing to cells. The exclusion of the border can then give the casual observer the belief that the application was not even developed on a spreadsheet and just looks like a normal computer data entry screen, and all the neater for the lack of alphabetic and numeric border intrusion.

The *Print* option allows you to print selected areas of the spreadsheet and also allows you to print out all the formulae. In the latter option, it rationalises all the formulae to a list of munbered alternatives and prints them out in the form

P26 .sum(C(+O)R(-44):C(+O)R(-2))

The column and row references need a little deciphering, and tend to confuse what really is a simple *Sum* command operating over a range of cells which might have been printed in the form *sum(C8:C10)*. Since the object of keeping a hard copy of the formulae is to enable you to re-enter them, this presentation only hinders the task. Other spreadsheets on the market show the formulae replacing the data, in situ alongside the text, which is helpful.

Full help facilities

Full help facilities on all aspects of the program are available, after a short delay to access the Microdrives. The documentation is adequate, with worked examples, but for a spreadsheet of this power one might expect more detail.

I was a little perturbed when I succeeded in crashing *Abacus*. I had created a dotted line over a number of columns, using the *Echo* command, and had issued a command to *Rubout* when the program bombed out. This should obviously not happen and is indicative that there is at least one bug still in the program. To put this in perspective, it was only one occasion in many hours of successful and trouble-free use. Data entry, on-screen cursor movement and the option to go directly to a specified location work very well, but moving the cursor downward beyond the current cell display causes a considerable delay in re-creating the screen.

The best features of Microsoft's *Multiplan*, Sorcim's *Supercalc* and Visicorp's *Advanced Visicalc* seem to have been recognised and the familiar '/' found in many spreadsheets has happily gone. My overall feeling is that *Abacus* is an excellent spreadsheet. I just wonder why Psion didn't go all the way to making this the spreadsheet of the decade!

The right note

***Mark Harrison** presents a short program to turn the Dragon into a musical organ*

This program produces a tremolo sound of two different notes in a minute fraction of a second In addition the note is maintained for as long as the key is depressed

I am a keen musician and I recently bought a musical box, but it played all the wrong chords To get round this problem on the Dragon, I have added the facility for a minor version of each major chord where necessary

The left arrow switches to the major scale while the right arrow switches to the minor scale The keys on the second row (↑ to @) represent the notes C to G

```
10 REM*********************
20 REM*   CHORD  ORGAN"  *
30 REM* BY MARK HARRISON *
40 REM* 12TH NOVEMBER 83 *
50 REM*  FOR THE DRAGON  *
60 REM*********************
70 CLS0
80 M=1
90 DIM P$(2,15),Q$(2,15)
100 LET P$(1,1)='O2C' .LET Q$(1,1)="O2E"
110 LET P$(1,2)='O2D' LET Q$(1,2)="O2F"
120 LET P$(1,3)="O2E' -LET Q$(1,3)='O2G"
130 LET P$(1,4)= O2F' -LET Q$(1,4)='O2A"
140 LET P$(1,5)='O2G' LET Q$(1,5)="O2B"
150 LET P$(1,6)='O2A" LET Q$(1,6)='O3C"
160 LET P$(1,7)='O2B":LET Q$(1,7)='O3D"
170 LET P$(1,8)= O3C' LET Q$(1,8)="O3E"
180 LET P$(1,9)='O3D' LET Q$(1,9)="O3F"
190 LET P$(1,10)='O3E' LET Q$(1,10)='O3G
'
200 LET P$(1,11)='O3F' 'LET Q$(1,11)="O3A
'
210 LET P$(1,12)='O3G' LET Q$(1,12)='O3B
'
220 FOR I=1 TO 12
230 LET P$(2,I)=P$(1,I):LET Q$(2,I)=Q$(1
,I)
240 NEXTI
250 LET P$(2,3)="O2E-'
260 LET P$(2,6)='O2A-"
270 LET P$(2,10)='O3E-
280 LET Q$(2,1)='O2E-"
290 LET Q$(2,4)='O2A-"
300 LET Q$(2,8)='O3E-"
310 LET Q$(2,11)='O3A-'
320 CLS3
330 PRINT"            CHORD-ORGAN"
340 PRINT
350 PRINT"^ Q W E R T Y U I O P @ <- ->"
360 PRINT
370 PRINT"D R M F S L T D R M F S MS MS"
380 PRINT"O A E A O A E O A E A O AC IC"
390 PRINT"H Y   H H H   H Y   H H JA NA'
400 PRINT"                        OL OL"
410 PRINT'                        RE RE'
420 POKE65495,0
430 PLAY"L255"
440 PRINT@352,"________________________
________';
450 I=0:GOSUB 510
460 PRINT@340,A$;.PRINT @336,B$;:PRINT@3
32,C$, C$=B$.B$=A$
470 PRINT@94+I*2,'*'
480 PLAY P$(M,I)+Q$(M,I)+P$(M,I)
490 PRINT@94+I*2,' "
500 IF PEEK(337)=255 THEN GOTO 450 ELSE
470
510 POKE 337,255:POKE 329,1:A$=INKEY$
520 IF A$<>'' THEN A=ASC(A$)
530 IF A>7 AND A<10 THEN M=A-7
540 IF A=94 THEN I=1
550 IF A=81 THEN I=2
560 IF A=87 THEN I=3
570 IF A=69 THEN I=4
580 IF A=82 THEN I=5
590 IF A=84 THEN I=6
600 IF A=89 THEN I=7
610 IF A=85 THEN I=8
620 IF A=73 THEN I=9
630 IF A=79 THEN I=10
640 IF A=80 THEN I=11
650 IF A=64 THEN I=12
660 IF A$="' THEN 510
670 IF A$=CHR$(8) OR A$=CHR$(13) THEN A$
="' RETURN ELSE RETURN
```

A contrary view

*Robert Morgan shows how to determine the inverse of any 3*3 matrix*

This program should be useful for anyone studying A-level maths. The program calculates the inverse of any 3*3 matrix, providing the inverse exists. The program shows how two dimensional arrays can be used to simulate matrices on a computer. The inverse is calculated using the co-factor, adjoint method.

The program displays all the matrices in a readable way, as they would appear on paper. The program only requires the matrix to be entered at the beginning in the way it would be written down.

Notes

- 100—445 Entering and checking matrix. Initialisation
- 450—600 Calculating & displaying co-factor matrix
- 610—650 Check matrix has determinant. If so determinant is calculated
- 700—830 Calculate & display adjoint matrix
- 430—650 Display inverse of matrix

The program is written in standard Basic and should be easily converted to other micros.

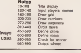
```
100 REM ******************************
101 REM *                            *
102 REM *        MATRICES 3*3        *
103 REM *                            *
104 REM *            BY              *
105 REM *                            *
106 REM *        ROBERT MORGAN       *
107 REM *                            *
108 REM *        (C) JAN 1984.       *
109 REM *                            *
110 REM ******************************
115 PRINT"ENTER VALUES FOR THE MATRIX"
120 DIMA(3,3),AI(3,3),AA(3,3),TA(3,3)
125 FORF=1TO3
130 PRINT"", INPUTA(F,1)
140 PRINT"", INPUTA(F,2)
150 PRINT"", INPUTA(F,3)
160 NEXT
250 PRINT"THE MATRIX IS AS FOLLOWS  -"
260 PRINT""
270 FORF=1TO3
290 PRINTTAB(10)A(F,1)TAB(15)A(F,2)TAB(20)A(F,3)
300 NEXT
400 PRINT" IS THIS CORRECT ?   (Y/N)"
410 POKE198,0
420 GETA$ IFA$=""THEN420
430 IFA$="N"THENRUN
440 IFA$="Y"THEN450
445 GOTO 410
450 REM CALCULATE CO-FACTOR MATRIX
460 AA(1,1)= ((A(2,2)*A(3,3))-(A(2,3)*A(3,2)))
470 AA(1,2)=-((A(2,1)*A(3,3))-(A(2,3)*A(3,1)))
480 AA(1,3)= ((A(2,1)*A(3,2))-(A(2,2)*A(3,1)))
490 AA(2,1)=-((A(1,2)*A(3,3))-(A(1,3)*A(3,2)))
500 AA(2,2)= ((A(1,1)*A(3,3))-(A(1,3)*A(3,1)))
510 AA(2,3)=-((A(1,1)*A(3,2))-(A(1,2)*A(3,1)))
520 AA(3,1)= ((A(1,2)*A(2,3))-(A(1,3)*A(2,2)))
530 AA(3,2)=-((A(1,1)*A(2,3))-(A(1,3)*A(2,1)))
540 AA(3,3)= ((A(1,1)*A(2,2))-(A(1,2)*A(2,1)))
550 PRINT" THE CO-FACTOR MATRIX IS  -"
560 PRINT""
570 FORF=1TO3
590 PRINTTAB(10)AA(F,1)TAB(15)AA(F,2)TAB(20)AA(F,3)
600 NEXT
610 REM CALCULATE THE DETERMINANT
620 D=(A(1,1)*AA(1,1))+(A(1,2)*AA(1,2))+(A(1,3)
*AA(1,3))
625 IF D=0THENPRINT" MATRIX HAS A ZERO DETERMINAT
- INVERSE  DOES NOT EXIST."
627 IFD=0THEN910
630 PRINT""
640 PRINT" THE DETERMINANT OF THE MATRIX IS  -"
650 PRINT" TAB(10)"1 /"D
700 REM CALCULATE ADJOINT MATRIX
710 FORF=1TO3
720 FORG=1TO3
730 TA(F,G)=AA(G,F)
740 NEXT NEXT
750 PRINT" THE ADJOINT MATRIX IS  -
760 PRINT""
770 FORF=1TO3
790 PRINTTAB(10)TA(F,1)TAB(15)TA(F,2)TAB(20)TA(F,3)
800 NEXT
810 PRINT"        HIT ANY KEY TO CONTINUE "
820 POKE198,0 WAIT198,1 POKE198,0
830 PRINT" THE INVERSE OF THE MATRIX IS  -
840 PRINT""
850 FORF=1TO3
860 PRINTTAB(9)TA(F,1)TAB(19)TA(F,2)TAB(29)TA(F,3)
870 PRINTTAB(9)"——"TAB(19)"——"TAB(29)"——"
880 PRINTTAB(9)DTAB(19)DTAB(29)D
890 PRINT""
900 NEXT
910 PRINT" ANOTHER MATRIX ? "
920 GETA$ IFA$=""THEN920
930 IFA$="Y"THENRUN
940 IFA$="N"THENPRINT"" END
950 GOTO920
```

A cross to bear

Jonathan Ingleton presents a simple two-player game of noughts-and-crosses

In this program, for the model B, the boxes on the screen are numbered from one to nine. To enter a nought or a cross in a particular box, simply type in the number of the box.

For ease of use player one always uses noughts and player two uses crosses.

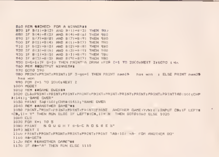


Notes

10-100	Title display
120-140	Input players' names
160-190	Draw grid
200-230	Draw numbers
270-280	Draw sequence
310-440	Circle move
450-580	Define circle
600-680	Define cross
880-950	Check for winner
960-990	Output winner

```
Escape at line 40
 L.
  10 DIM B(9)
  20 MODE 7
  30 FOR loop=1 TO 9
  40 B(loop)=1000+loop
  50 NEXT
  60 G=0
  70 REM 1023-UP 1279-ACROSS
  80 FOR X=1 TO 10
  90 PRINT TAB(6);CHR$(141);"NOUGHTS & CROSSES"
 100 NEXT X
 110 PRINT:PRINT:PRINT
 120 INPUT "NAME OF PLAYER 1:"nam1$
 130 PRINT:PRINT
 140 INPUT "NAME OF PLAYER 2:"nam2$
 150 MODE1
 160 REM **DRAW GRID**
 170 MOVE 500,300:DRAW500,900:MOVE700,900:DRAW700,300:
MOVE300,700:DRAW900,700:MOVE900,500:DRAW300,500
 180 PRINT TAB(12);"NOUGHTS & CROSSES"
 190  PRINT TAB(12);"-----------------"
 200 REM **NUMBERS ON GRID**
 210 PRINT TAB(10,4);"1";TAB(16,4);"2";TAB(22,4);"3"
 220 PRINT TAB(10,11);"4";TAB(16,11);"5";TAB(22,11);"6"
 230 PRINT TAB(10,17);"7";TAB(16,17);"8";TAB(22,17);"9"
 240 PRINT:PRINT PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:
PRINT:PRINT TAB(20);"BY J. INGLETON"
 250 gc=1
 260 IF G>=5 THEN 860
 270 REM **DRAW SEQUENCE**
 280 G=G+1:IF G>7 THEN PRINT "A Draw ":END
 290 IF gc=2 THEN 690
 300 A$=GET$
 310 REM **CIRCLE MOVE**
 320 IF A$="1" THEN xc=390:yc=800:VDU7
 330 IF A$="2" THEN xc=600:yc=800:VDU7
 340  IF A$="3" THEN xc=800:yc=800:VDU7
 350 IF A$="4" THEN xc=390:yc=600:VDU7
 360 IF A$="5"THEN xc=600:yc=600:VDU7
 370 IF A$="6"THEN xc=800:yc=600:VDU7
 380 IF A$="7"THEN xc=390:yc=400:VDU7
 390 IF A$="8"THEN xc=600:yc=400:VDU7
 400 IF A$="9"THEN xc=800:yc=400:VDU7
 410 A=VAL (A$)
 420 IF B(A)>999 THEN 440
 430 GOTO 300
 440 B(A)=1
 450 DEF PROCcircle(r,xc,yc)
 460 GCOL 0,1
 470 r=70
 480 MOVE -r+xc,yc
 490 FOR xx=-r TO r STEP 4
 500 ht=SQR(r 2-xx 2)
 510 DRAW xx+xc,ht+yc
 520 NEXT xx
 530  FOR xx=r TO -r STEP -4
 540  ht=SQR(r 2-xx 2)
 550  DRAW xx+xc,yc-ht
 560 NEXT xx
 570 gc=2
 580 GOTO 260
 590 REM
 600 DEFPROCcross
 610 GCOL 0,2
 620 x=x-50:y=y+50
 630 MOVE x,y
 640 DRAW x+100,y-100
 650 MOVE x,y-100
 660 DRAW x+100,y
 670 gc=1
 680 ENDPROC
 690 A$=GET$
 700 REM **CROSS MOVE**
 710IF A$="1" THEN x=390:y=800:VDU7
 720IF A$="2" THEN x=600:y=800:VDU7
 730 IF A$="3" THEN x=800:y=800:VDU7
 740IF A$="4" THEN x=390:y=600:VDU7
 750IF A$="5" THEN x=600:y=600:VDU7
 760IF A$="6"THEN x=800 y=600:VDU7
 770IF A$="7" THEN x=390 y=400:VDU7
 780IF A$="8" THEN x=600:y=400:VDU7
 790IF A$="9"THEN x=800:y=400:VDU7
 800 A=VAL (A$)
 810 IF B(A)>999 THEN 830
 820 GOTO 690
 830 B(A)=2
 840 PROCcross
 850 GOTO 260
 860 REM **CHECK FOR A WINNER**
 430 GOTO 300
 440 B(A)=1
 450 DEF PROCcircle(r,xc,yc)
 460 GCOL 0,1
 470 r=70
 480 MOVE -r+xc,yc
 490 FOR xx=-r TO r STEP 4
 500 ht=SQR(r^2-xx^2)
 510 DRAW xx+xc,ht+yc
 520 NEXT xx
 530  FOR xx=r TO -r STEP -4
 540  ht=SQR(r^2-xx 2)
 550  DRAW xx+xc,yc-ht
 560 NEXT xx
 570 gc=2
 580 GOTO 260
 590 REM
 600 DEFPROCcross
 610 GCOL 0,2
 620 x=x-50:y=y+50
 630 MOVE x,y
 640 DRAW x+100,y-100
 650 MOVE x,y-100
 660 DRAW x+100,y
 670 gc=1
 680 ENDPROC
 690 A$=GET$
 700 REM **CROSS MOVE**
 710IF A$="1" THEN x=390:y=800:VDU7
 720IF A$="2" THEN x=600:y=800:VDU7
 730 IF A$="3" THEN x=800:y=800:VDU7
 740IF A$="4" THEN x=390:y=600:VDU7
 750IF A$="5"THEN x=600:y=600:VDU7
 760IF A$="6"THEN x=800:y=600:VDU7
 770IF A$="7"THEN x=390:y=400:VDU7
 780IF A$="8" THEN x=600:y=400:VDU7
 790IF A$="9"THEN x=800:y=400:VDU7
 800 A=VAL (A$)
 810 IF B(A)>999 THEN 830
 820 GOTO 690
 830 B(A)=2
 840 PROCcross
 850 GOTO 260
```

continued over the page



```
860 REM **CHECK FOR A WINNER**
870 IF B(1)=B(2) AND B(1)=B(3) THEN 980
880 IF B(4)=B(5) AND B(4)=B(6) THEN 980
890 IF B(7)=B(8) AND B(7)=B(9) THEN 980
900 IF B(1)=B(4) AND B(1)=B(7) THEN 980
910 IF B(2)=B(5) AND B(2)=B(8) THEN 980
920 IF B(3)=B(6) AND B(3)=B(9) THEN 980
930 IF B(1)=B(5) AND B(1)=B(9) THEN 980
940 IF B(3)=B(5) AND B(3)=B(7) THEN 980
950 G=G+1:IF G=10 THEN PRINT"A DRAW :FOR Z=1 TO 2000:NEXT Z:GOTO 1060
960 REM **OUTPUT WINNER**
970 GOTO 290
980 PRINT:PRINT:PRINT:IF 3-go=1 THEN PRINT nam1$" has won ": ELSE PRINT nam2$
 has won
990 FOR Z=1 TO 2000:NEXT Z
1000 MODE7
1010 REM **GAME OVER**
1020 CLS:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINTTAB(10);CHR
$(141);"GAME OVER"
1030 PRINT TAB(10);CHR$(141);"GAME OVER
1040 REM **ANOTHER GAME?**
1050 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT" ANOTHER GAME(Y/N)":INPUT C$:IF LEFT$
(C$,1)="Y" THEN RUN ELSE IF LEFT$(C$,1)="N" THEN GOTO1060 ELSE 1020
1060 CLS
1070 FOR X=1 TO 5
1080 PRINT" N O U G H T S-&-C R O S S E S"
1090 NEXT X
1100 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT TAB(10)"<A> FOR ANOTHER GO"
1110 A$=GET$
1120 REM **ANOTHER GAME?**
1130 IF A$="A" THEN RUN ELSE 1110
```



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Trade and export enquiries welcome.

Open Forum

Open Forum is for you to publish your programs and ideas. Take care that the listings you send in are all bug-free. Your documentation should start with a general description of the program and what it does and then give some detail of how the program is constructed.

Sound FX

on Spectrum

The Spectrum is not renowned for its good sound facilities. Compared with the four voices of the BBC computer the one voice sound seems rather crude. However some very spectacular sound effects can be programmed in machine code. The listing below consists of several sound programs (and one graphics program) all of which can be relocated anywhere in *Ram* by just changing the *Usr* address. Each program is held in a separate data statement (lines 100-160).

The programs themselves repeatedly calls the *Beep Rom* routine to produce the sound effects. It is possible to change the initial value of the HL and DE register to change the initial pitch and duration of the notes.

```
10 CLEAR [illegible]: LET c=0: FOR a=32882 TO 325[illegible]: POKE 23692,-1: READ b: POKE a,b
LET c=c+PEEK a: PRINT a;"=";PEEK a: NEXT a

20 IF c<>14779 THEN PRINT "Error in Data statements": STOP

30 RANDOMIZE USR [illegible]: REM Colour paper change.

40 RANDOMIZE USR 32402: REM border change.

50 RANDOMIZE USR 32424: REM Sliding tone.

60 RANDOMIZE USR 32451: GO TO 60: REM Siren.

70 RANDOMIZE USR 32495: REM Explosion!

80 RANDOMIZE USR 32521: REM Squeal.

90 RANDOMIZE USR 32545: GO TO 90: REM Phaser.

100 DATA [illegible],255,87,17,0,88,1,0,3,119,[illegible],254,1,7,32,239,201

110 DATA 6,40,14,255,[illegible],211,254,60,254,20,32,[illegible],121,32,243,5,120,32,237,2
01

120 DATA 1,[illegible],3,100,1,17,1,0,229,[illegible],197,205,181,[illegible],225,35,35,11,120,2
54,0,32,234,201

130 DATA 1,94,1,[illegible],144,1,17,3,0,229,197,205,181,3,193,225,35,11,120,254,0,32,23
[illegible],197,[illegible],205,181,3,225,193,11,43,120,254,0,32,239,201

140 DATA 17,1,0,1,0,0,30,0,10,111,229,213,197,205,181,3,193,209,225,3,120,254,7
[illegible],201

150 DATA 1,244,1,33,44,1,17,1,0,229,197,205,181,3,19[illegible],225,35,11,120,254,0,32,23
9,201

160 DATA 1,127,0,3[illegible],170,[illegible],1,0,213,197,229,205,181,3,225,
[illegible],254,1,32,238,201
```

Sound FX
by N Osborn

Encription

on BBC

This program allows you to make your own codes and decode them. It is menu driven and self explanatory — all the sections are clearly delineated by *Proc* statements.

```
10REM ****************************
20REM *** ENCODER/DECODER ***
30REM *** (C) COLIN PRYKE ***
40REM *** MARCH 14th 1984 ***
50REM ****************************
60MODE7
70A$=""
80PROCMENU
90END
100DEFPROCMENU
110CLS
120PRINT
130PRINTCHR$130;CHR$141;"ENCODER/DECODER"
140PRINTCHR$130;CHR$141;"ENCODER/DECODER"
150PRINT
160PRINT
170PRINTCHR$131;"1...ENCODE MESSAGE"
180PRINT
190PRINTCHR$131;"2...DECODE MESSAGE"
200PRINT
210PRINTCHR$131;"3...EXIT"
220PRINT
230PRINTCHR$132;"Input your choice"
240REPEAT
250B$=INKEY$(0)
260UNTIL B$="1" OR B$="2" OR B$="3"
270IF B$="1" PROCENCODE
280IF B$="2" PROCDECODE
290IF B$="3" PROCEXIT
300ENDPROC
310DEFPROCENCODE
320CLS
330PRINT
340PRINTCHR$130;CHR$141;"ENCODE MESSAGE"
350PRINTCHR$130;CHR$141;"ENCODE MESSAGE"
```

Open Forum

```
360PRINT
370PRINT
380PRINTCHR$131;"1...INPUT MESSAGE"
390PRINT
400PRINTCHR$131;"2...SCRAMBLE MESSAGE"
410PRINT
420PRINTCHR$131;"3...MAIN MENU"
430PRINT
440PRINTCHR$132;"Input your choice"
450REPEAT
460B$=INKEY$(0)
470UNTIL B$="1" OR B$="2" OR B$="3"
480IF B$="1" PROCINPUT
490IF B$="2" PROCSCRAMBLE
500IF B$="3" PROCMENU
510PROCENCODE
520ENDPROC
530DEFPROCINPUT
540CLS
550PRINT
560PRINTCHR$130;CHR$141;"INPUT MESSADE"
570PRINTCHR$130;CHR$141;"INPUT MESSADE"
580PRINT
590PRINT
600PRINT
610PRINTCHR$131;"Input your message"
620PRINTCHR$131:INPUTA$
630FOR A=1 TO LEN(A$)
640IF MID$(A$,A,1)<CHR$64 OR MID$(A$,A,1)>
   CHR$90 THEN PROCINERR
650NEXT
660ENDPROC
670DEFPROCINERR
680IF MID$(A$,A,1)=CHR$32 THEN ENDPROC
690PRINT
700PRINTCHR$135;"Input Error!!!"
710PRINT
720PRINTCHR$135;"A-Z + @ ONLY!!"
730PRINT
740PRINTCHR$132;"Hit any key"
750REPEAT
760B$=INKEY$(0)
770UNTIL B$<>""
780PROCINPUT
790ENDPROC
800DEFPROCSCRAMBLE
810CLS
820PRINTCHR$130;CHR$141;"SCRAMBLE MESSAGE"
830PRINTCHR$130;CHR$141;"SCRAMBLE MESSAGE"
840PRINT
850PRINT
860PRINT"1...RANDOM SCRAMBLE"
870PRINT
880PRINT"2...USER DEFINED SCRAMBLE"
890PRINT
900PRINT"3...MAIN MENU"
910PRINT
920PRINTCHR$132;"Input choice"
930REPEAT
940B$=INKEY$(0)
950UNTIL B$="1" OR B$="2" OR B$="3"
960IF B$="1" PROCRSCR
970IF B$="2" PROCDSCR
980IF B$="3" PROCMENU
990ENDPROC
1000DEFPROCRSCR
1010C=INT(RND(26)+64)
1020IF C<66 OR C>90 THEN PROCRSCR
1030PROCSCRMES
1040ENDPROC
1050DEFPROCDSCR
1060CLS
1070PRINT
1080PRINTCHR$130;CHR$141;
   "USER DEFINED SCRAMBLE"
1090PRINTCHR$130;CHR$141;
   "USER DEFINED SCRAMBLE"
1100PRINT
1110PRINT
1120PRINTCHR$131;"Input character to be A"
1130REPEAT
1140B$=INKEY$(0)
1150UNTIL B$>CHR$64 AND B$<CHR$91
1160C=ASC(B$)
1170PROCSCRMES
1180ENDPROC
1190DEFPROCSCRMES
1200CLS
1210PRINT
1220PRINTCHR$130;CHR$141;
   "SCRAMBLING MESSAGE"
1230PRINTCHR$130;CHR$141;
   "SCRAMBLING MESSAGE"
1240PRINT'
1250IF A$="" PRINTCHR$135;"NO MESSAGE!!":
   TIME=0:REPEAT UNTIL TIME>100:PROCENCODE
1260MES$=""
1270MES$=CHR$(C)
1280C=C-64
1290FOR A=1 TO LEN(A$)
1300C$=MID$(A$,A,1)
1310D=ASC(C$)
1320IF D=32 MES$=MES$+"@":NEXT
1330D=D-64
1340IF D+C>26 THEN E=(D+C)-26 ELSE E=(D+C)
1350E=E+64
1360C$=CHR$(E)
1370MES$=MES$+C$
1380C$=""
1390D=0
1400E=0
1410NEXT
1420PRINT
1430PRINT
1440PRINTCHR$131;"Encoded Message=:"
1450PRINT
1460PRINTCHR$132;MES$
1470PRINT
1480PRINTCHR$131;"Do you want it printed"
1490REPEAT
1500B$=INKEY$(0)
1510UNTIL B$="Y" OR B$="N"
1520IF B$="Y" THEN PROCPRINT
1530ENDPROC
1540DEFPROCPRINT
1550VDU2
1560PRINTMES$
1570VDU3
1580ENDPROC
1590DEFPROCEXIT
1600CLS
1610PRINT'''''
1620PRINTCHR$131;" Byeee!!!!!!"
1630END
1640ENDPROC
1650DEFPROCDECODE
1660CLS
1670PRINT
```

continued on page 39 ▶

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You may already have a game up your sleeve. Or this may be the stimulus to get cracking on that masterpiece you always knew you could write. Either way, we must receive your submission by July 30th.

What you should send

Send us the program listing, written in BASIC (not machine code), preferably on a cassette.

Include a short synopsis of the object of the game or puzzle, a brief description of what should happen when the program is run and an indication of the level of difficulty.

All entries will be acknowledged, and must be received by July 30th. Those entries included in the books will carry the names of the authors and remain their copyright.

Please send your entry to:
The Times Book of Computer Puzzles & Games
c/o Newtech Publishing Limited
8 Forge Court, Reading Road, Yateley
Camberley, Surrey GU17 7RX.



These two books will be published by Times Books and Sidgwick & Jackson on 31st October 1984

```
1680PRINTCHR$130:CHR$141:"DECODE MESSAGE"
1690PRINTCHR$130:CHR$141:"DECODE MESSAGE"
1700PRINT
1710PRINT
1720PRINT
1730PRINTCHR$131:"1...INPUT MESSAGE"
1740PRINT
1750PRINTCHR$131:"2...DECODE MESSAGE"
1760PRINT
1770PRINTCHR$131:"3...MENU"
1780PRINT
1790PRINTCHR$132:"Input choice"
1800REPEAT
1810B$=INKEY$(0)
1820UNTIL B$="1" OR B$="2" OR B$="3"
1830IF B$="1" PROCINPUT
1840IF B$="2" PROCDECOD
1850IF B$="3" PROCMENU
1860PROCDECODE
1870ENDPROC
1880DEFPROCDECOD
1890CLS
1900PRINTCHR$130:CHR$141:"DECODING"
1910PRINTCHR$130:CHR$141:"DECODING"
1920PRINT
1930PRINT
1940IF A$="" THEN PRINT"No message!!!":
TIME=0:REPEAT UNTIL TIME>100:PROCDECODE
1950MES$=""
1960B$=MID$(A$,1,1)
1970C=ASC(B$)
1980C=C-64
1990FOR A=2 TO LEN(A$)
2000IF MID$(A$,A,1)="@" THEN MES$=MES$+"
    ":NEXT
2010D$=MID$(A$,A,1)
2020D=ASC(D$)
2030D=D-64
2040IF D-C<1 THEN E=(D-C)+26 ELSE E=(D-C)
2050E=E+64
2060B$=CHR$(E)
2070MES$=MES$+B$
2080NEXT
2090PRINTCHR$131:"Decoded message=:"
2100PRINT
2110PRINTCHR$132:MES$
2120PRINT
2130PRINTCHR$131:"Do you want it printed"
2140PRINT
2150REPEAT
2160B$=INKEY$(0)
2170UNTIL B$="Y" OR B$="N"
2180IF B$="Y" PROCPRINT
2190ENDPROC
```

Encription
by David Pryke

Microradio

GW6JJN

Portable station

Microradio has recently devoted a great deal of time to software and, to keep the balance, this week and next week will deal with hardware. A very special and highly desirable piece of hardware: The Tandy TRS-80 Model 100 portable computer.

Mr V Moore of the Tandy Corporation, Tameway Tower, Bridge Street, Walsall, West Midlands, kindly loaned Microradio their new Model 100 in order to explore the possibilities of using the machine in Radio Computing. This is obviously an aspect that is close to their heart because Tandy are also a supplier of radio equipment and aerials, etc.

Although the Model 100 is a portable computer, its facilities are not limited. In fact, there are very few home computers around that can match its power. But, a machine like this comes into its own when it's out and about. One of the things about operating a portable station on top of a mountain, either during a contest or just for the sheer fun of operating, is the tedium involved in keeping a note of the log. I was quite prepared to write a program for the Model 100 to do this for me. No need. In the software that comes in Rom is a program called *Address*. This is a database where names and call signs can be entered and referred to immediately.

The next most useful thing to have in a contest is a 'duper' program. That is a program into which I can enter the call-sign of a station to see if he has been contacted before, ie, a duplicate. As the Model 100 has a very good Microsoft Basic in Rom, this was no real problem. Once the program has been written, it remains resident in the computer. So does the information entered. The machine has a cassette interface, but I never needed to use it once. The machine on loan was a 32K.

Another facility available is the inbuilt word processor called *Text*. I am using it now to write the column and, to be perfectly honest, I don't know how I'll get on without it. Have to start saving the £645 that the Model 100 costs.

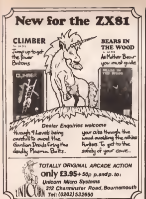
When one is out on a mountain, there is always a chance of dropping the thing. I must admit that I didn't test this aspect of the Model 100 for obvious reasons, but I'm assured that it is a very rugged machine.

So far, I've covered the data processing aspect of computing for radio users as far as the Model 100 is concerned. Next week, I'll cover the interfacing and special unit that can be attached to it so that direct radio communications can be made.

At this point I must mention an urgent plea from Dave West G4SHQ of 129 Old Stoke Road, Aylesbury, Bucks, HP21 8DG, who would very much like to hear from Memotech 500/512 users interested in radio.

Ray Berry GW6JJN

This series of articles is designed for radio and microcomputer enthusiasts alike. If you have any queries that you want answered, hints and tips to share or topics that you would like to see covered, write to: Ray Berry, Microradio, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD



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Camberley, Surrey, GU15 4YF.

Open Forum

Merge

on Dragon

This program gives the Dragon a *merge* command. The command is used to combine two programs together. Once routine is loaded it can stay in the Dragon until turned off. The command is used as follows:

Load routine and execute & h2220 if not already done.

Load program A. Type "MO" ENTER.
Load program B, with the line numbers greater than the highest in program A. Type "MF" ENTER.
LIST

```
[illegible]
```

Merge
by R Newby

Arcade Avenue

Test of time

When you pay for a program how do you decide what is worth buying? Do you go by the reviews, the packaging, the reputation to the company, the recommendation of friends or because you have seen the game in action somewhere? The problem with the first three at least is that the quality of computer software is progressing by leaps and bounds. How can we predict the life span of a game or be sure that it's really worth buying several months after its initial launch? This is especially true of the long staying programs, such as the apparently evergreen *Football Manager*, which sometimes reappear on different computers months or even years after their original release. Occasionally therefore, I intend to look back at some of the great games that have been released to see how they have stood the test of time.

For the next couple of issues I'm going to concentrate on the range of cassettes offered by Ocean. Although rarely given the critical acclaim of the likes of Ultimate or Matthew Smith, Ocean have had an outstanding run of success with one or two of their releases appearing in every software chart for many mouths. Although they have a collection of lesser known games hidden in their past, doubtless scrappy versions of *Frogger* and *Centipede* amongst them, Ocean first made a real impact on the software scene with their release of the more ambitious *Kong*.

Donkey Kong was possibly the first reasonably complex multi-screen arcade game to be transferred to the Spectrum. As is the way with unoriginal games, many software companies issued versions at the same time but in the charts Ocean won hands down. *Kong* remained in the Spectrum top ten for many months. The success was based on reasonably slick pixel scrolling graphics (the exception rather than the rule at the time) and a faithful reproduction of most of the elements of the original. This was a formula that Ocean have improved and built upon since.

However, looked at in retrospect *Kong* is a rather dated program. I don't think Ocean themselves would deny that a definitive version for the Spectrum is yet to appear, indeed if Ocean were to do it again they would spend a lot more time on the graphics if nothing else. The biggest disappointment is the small stick man size of Mario and I am waiting with interest for the Atarisoft version to see what they can do. Still with a likely cost of £15 I don't think Ocean's sales department will lose much sleep.

The next release from Ocean was *Mr Wimpey*, based on *Burgertime*, and fully reviewed in an earlier issue of *PCW*. This program gave the first clue of the sheer quality of the copies that Ocean were to produce and remains one of my favourite games. Realising the goldmine of this formula *Mr Wimpey* was soon released for other micros namely the CBM 64 and BBC. As is to be expected the graphics in the Commodore version are slightly better than in the Spectrum as is the sound, although unfortunately the opportunity for adding a full musical soundtrack has not been taken up.

By the time *Hunchback* was released, the customers were waiting with bated breath and it leaped into the number one spot. In many ways this is the epitome of Ocean's art — as perfect a copy as you could ever hope to achieve on the Spectrum. The Commodore version is better still due to the inclusion of the wonderful opening screens where Quasimodo hops along the bottom of the wall — something that would be difficult to achieve on the Sinclair machine because of the colour resolution problems.

Next week I will continue this look at the more recent games released by Ocean including some original games.

Tony Kendle

The Arcade Corner is a new section for anyone who enjoys playing arcade games. If you have any comments, from playing tips on difficult games or programs you'd particularly like to praise (or blame!) then write to Tony Kendle, Arcade Avenue, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.



Tony Bridge's Adventure Corner



Phases of the moon

News this week of two long-awaited adventures. The first is from Carnell Software. At last *Wrath of Magra* has begun to be shipped to the first of 10,000 advance customers.

The price of £12.95 seems very fair, including as it does, three large programs in a stout box with an instruction booklet and on top of all this the 158-page *Book of Shadows*. In writing this Stuart Galloway and Roy Carnell have expanded on the Legend of the Third Continent which was started in *Volcanic Dungeon* and continued in *The Black Crystal*.

The book makes exciting and involved reading with stunning illustrations by Emmanuel, and is required reading if you wish to play the adventure to full effect. The later part of the book includes ingredients for spells which you will have to make up during your struggles against the evil forces. There is also a Grimoire of Fantastic Monsters that you will meet in the mines beneath the Black Mountains as well as a glossary of Enchanted Treasures.

Wrath of Magra is in three episodes. The first part is taken up with your search for equipment, treasures and spell ingredients. The customary adventure format is followed with the location being shown in graphics, and text scrolling up beneath the picture. On the right of the screen is a table of important information which remains on-screen during all three episodes. It includes details of your strength, both physical and spiritual, the number of wounds you have sustained in combat and the time, which is an important variable in *Magra*.

Passing time is also represented by a display of the phases of the moon — you'll need to keep an eye on these all the time you're playing. The pictures at each location also reflect the time of day.

After the first part of the adventure, the player can move on to the mines beneath the Black Mountains, where spells can be cast and one or ten monsters fought, while building up faith for the third and hardest part.

The latter episodes will be familiar to devotees of *Volcanic Dungeon* and as in that program maps are supplied to help the player around the caves and chasms of Magra's Kingdom.

The package is impressive and the game is a good one which will keep the player occupied for many weeks. Graphics are very quickly drawn, the routines being written in compact machine-code, though the text processing is rather slow. The wrong part of this has been speeded-up — that is, key "auto-repeat" is set to ultra-fast and I found myself having to backspace far too often to delete mis-typed letters.

However, *Wrath of Magra* can be heartily recommended, and there is even a competition for four Enterprise computers with colour TV! — and a pile of colour TVs waiting for the runner-up. Not only this, but the player gets several examples of the Carnell Spelling Error!

The other important adventure release this month, and one which should last for several more months, is *Lords Of Midnight*, from Beyond Software. This package, too, is enhanced by excellent documentation, as in all Beyond programs, which takes the form of a 30-page booklet. This is in two parts — the instructions and 19 pages from *The Book Of Midnight*. As with *Magra*, this sets the scene for the game.

The novel is part of a "novel" prize! A copy may be taken on a printer of each screen along the way to the defeat of Doomdark and the first player to achieve this feat may have his screen copies incorporated into the first-ever computer-generated novel!

Midnight is written by Mike Singleton, a well-known figure on the British Play-by-Mail scene, and author of several games for Postern. In this adventure, he has pioneered a technique called "Landscaping", his term for the graphics used. As your character walks around the land of Midnight, the landscape changes constantly, just as if you were actually walking through the countryside — to achieve this, no less than 32,000 different panoramic views have been created. You, the player, may choose to control any one, or all, of four characters.

The game is a graphic adventure, and is a little similar to *Valhalla*. There are no puzzles to be pondered over — only four main commands have to be mastered. *Look* will display the scene as it looks to the character you are controlling, and movement is accomplished by the usual N, S, etc. *Move* will keep the players going in the present direction. While the graphics are on-screen, there is only a small space available for information to the player, and the *Think* command clears the screen to allow more detailed data about the player's character to be shown.

Choose, the final command, presents the player with a list of special options not available with the other comands. These options will reflect the basic personality of the character being controlled; thus, a cowardly character is unlikely to be able to perform brave deeds, although they may occasionally be offered.

The mechanics of the game are rational — that is, movement through a forest will be slower than across a plain. Castles may offer shelter or harbour enemies and mountains will prove exhausting to cross. There are many other such features dotted about the landscape and each will possess its own unique properties. Although there are several items to be picked up, each of which may be of help in the Quest, the basic premise of the adventure is combat with the enemy armies.

The Grand Elf has only seen a "super-demo" so far, which doesn't include the whole game, but the graphics are superb, with heraldic devices being shown on-screen for each character, and a beautiful Olde-English script. It's obviously going to be an outstanding success.

The Wrath of Magra and *Lords of Midnight*, with their exciting packaging and epic scenarious, are going to make this summer a very busy one!

This series of articles is designed for novice and experienced Adventurers alike. Each week Tony Bridge will be looking at different Adventures and advising you on some of the problems and pitfalls you can expect to encounter. So if you have an Adventure you want reviewed, or if you are stuck in an Adventure and cannot progress any further, write to Tony Bridge, Adventure Corner, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.

Peek & Poke



AMSTRAD MONITOR

Paul Smith of Cheam, Surrey writes

Q **My problems may seem a little strange since they concern the new Amstrad computer which has yet to be launched, but I hope from the information available about it you can help me.**
1) What size is its monitor?
2) May other computers work with its monitor?
3) Can the Amstrad work with conventional T.V's
4) What is Amstrad's address?

A I hope that you found the review of the new Amstrad computers in the April 25th issue useful. Although this machine is not yet launched it does seem destined for a good future in the UK market.

It has a 14" monitor which is an integral part of the machine. As far as I know there are no plans to sell the Amstrad computers without the monitors. It is therefore unlikely that you would want to interface it to a standard TV set, although you could if you needed to. For further information on this range of computers you should write to Amstrad Consumer Electronics, Brentwood House, 169 Kings Road, Brentwood Essex CM1 4EF.

COLOURED CIRCLES

Kevin Whitley, of Pendine Park, Gwersyllt writes

Q **About three months ago I bought a Sinclair Spectrum 48K computer. Can you tell me how to colour in circles quickly without using User-defined graphics?**

A The lack of a *Fill* command on the Spectrum is one of the most annoying features of the machine. The most common method of achieving a solid circle in Basic is to either draw a number of circles (raising the radius by 1 each time until the correct size is reached), or to *Poke* the appropriate bytes in the attributes file with the required *Paper* colour.

Games which employ static pictures, such as the *Hobbit*, use machine code routines to achieve the rapid filling that you have no doubt seen.

My advice to you would be to look for a book containing a machine code *Fill* routine such as *Supercharge Your Spectrum* published by Melbourne House.

DIFFERENT SCREENS

Ian Deacon of Thurmaston, Leicester writes

Q **I am right in the middle of writing a program which features 20 different screens, each of which needs 4 UDG's to build up that particular brand of alien, this is a total of 80 in all. Then I need a further 45 UDG's for explosions, backgrounds etc. This is a total of 125 UDG's.**

My problem is that the Spectrum only supports 21. I have heard that it is possible to have 55 different sets of UDG's in memory at once, by *Pokeing* them into different areas of memory, then by *Pokeing* to that address you can switch between any of your sets, thus allowing up to 1155 UDG's in memory at any one time. As I only need 125 this should present no problems, but how do I go about *Pokeing* in these characters and then switching between them? Finally, how much memory would 15 UDG's roughly take up?

A Let me answer your questions in reverse order. Each UDG takes up 8 bytes of memory, one byte for each row of pixels defined. Therefore, 15 UDG's would take up 120 bytes of memory.

The method of setting up an User Defined Graphic on the Spectrum is well known, what is less well known is the method of extending the UDG facility in the way you require.

As you require a total of 125 UDG's, you will need to reserve 1000 bytes of memory to store them in. You do this by using *Clear*, as you would if you were using a machine code subroutine. To set up your UDG's you follow the same procedure as normal, except that the bounds of the *For... Next* loop refer to the memory locations in which you are going to store the graphics characters, ie, if you are going to store your UDG's in locations 63000 to 63999. Then the code might look like this

For I = 6300 TO 6399: *Read* a: *Poke* i,a: *Next* i

This assumes that you have your UDG's defined in *Data* statements in the normal way. Then when you want to use one of your graphic sets you would like *Poke* 23675 and 23676 with the start address of the particular set you wanted, eg, set 1 would be at address 63000, set 2 at address 63168 (if there were 21 of them), and so on. In your case you will need to organise your graphic sets carefully as you will still only be able to access 21 UDG's at any one time. Best of luck with the game.

OUT OF SERVICE

J Van Hecke of Eeklo, Belgium writes

Q **I have recently purchased a Simon's Basic package for my CBM64. I am quite pleased with it, but I discovered that some programs, particularly those containing machine code, do not work when the package is plugged in. I wonder whether there is any way of taking the package out of service without having to remove it every time, since frequent removal and refitting won't do the cartridge contacts any good.**

A The only answer I can give is no. It seems a common feature of cartridge Rom software, interfaces, and sideways Roms that there are almost always problems associated with running machine code programs. This is normally because the programmer has used a piece of memory reserved for the interface, or superseded by the extra *Rom*. I am afraid that you will have to keep on removing your cartridge when you want to play these games.

PRICE REDUCTION

Ian Davies of Sutton Coldfield writes

Q **I have owned a Dragon 32 for some time, and am now intending to buy either an Electron or a BBC 'B'.**

I have heard that these machines are to be reduced in price, to £130 and £250 respectively. Do you know if this is true? Secondly, will I be able to use the same printer on the Acorn machine that I do now with my Dragon?

A I haven't heard of the price drop you mention. I don't think such a cut is likely to occur soon — but that probably means it will happen the day after this is published.

The amount of advertising that Acorn are giving to the Electron does not indicate an immediate price drop is in prospect.

You will be able to connect a printer to the Model B. Tandy printers are compatible with both the Dragon and the BBC 'B'. The Electron itself has no printer interface, but Acorn has announced its Plus-1 add-on unit for the Electron — it includes a Centronics interface. Acorn says it is available now, price £59.90.

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem *Peek* it to Phil Rogers and every week he will *Poke* back as many answers as he can. The address is *Peek & Poke*, *PCW*, 12-13 Little Newport Street, London WC2R 3LD.



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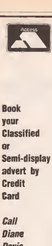
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VIDEO GENIE 16K manuals + leads includes + s/w W Irving. Tel (0380 81) 2596

TANDY COLOUR MICRO II, with boxes & games worth £175. Swap for Spectrum. Any key. Tel 041 424 0366 (after 4pm)

TANDY TRS 80. Four programs, joystick & tape recorder £180 Tel Bradford 684402

TANDY CGP-115 printer with BBC interface cost over £150. Swap for any BBC disc drive preferably TEAC LVL or Cumana. Must be in good condition. Tel Coventry 614924

TANDY CGP-115 printer with BBC interface. As new. Only used for a couple of program listings. Offers please. BBC games, top names, originals, £5 each. Tel Coventry 614424

AQUARIUS (unexpanded) game. Send £1.75 for Sketch game. B Dowsett, 9 The Crescent Market Harborough, Leics

ZX81s for sale

ZX81 Originals including Starfighter, Pyramid Artist Flight Simulation QS Defender and QS Scramble. All boxed and working only £3 each. Also 16K Ram pack p/wo only £14. Tel 01-668 3416

ZX81 16K £80 of s/w + recorder. Swap for VIC 20 starter or 16/48K spectrum & s/w or Oric & s/w. Write details to 38 Meadow Street, Houghton-le-Spring, Tyne and Wear DH5 9RE.

ZX81 + **16K** Ram £15. ZX81 in need of repair. Computer mags. and software for sale write for details. Mrs A. Pollet, 80 Cock Road, Kingswood Bristol.

ZX81 S/W (original). More than 30 programs inc Hi-Res Invader Galaxies Chess Reversie, Hi-Res Tool Kit Space Trek Tool Kit, Invaders Flight Simulators, £2 each. Tel 01-679 4310 (eves.)

ZX81 + **16K RAM** 6 software tapes & b ooks as new. Boxed. Still under guarantee £40 Tel Bristol 516527

ZX SPECTRUM, 11 rolls of printer paper £15. The lot at £1.30 each. Also about £200 of games £3 per tape or £120 the lot. Tel Iver 48K 38K (eves.)

48K SPECTRUM boxed nice condition all leads manuals etc. With £50 worth of good software £100. R A Kidd 20 Buckfast Close Ipswich Suffolk IP2 9RG

ZX81 PRINTER with 6 rolls of paper interface for VIC 20 or CBM 64 £40.00 Tel 01 479 7886 after 6pm

16K ZX81 Alpha Probe game swap for adventure game for same computer Tel 061 334 9606 Mr D.J. Lay

ZX81 16K Hi-Res graphics board. 5 games keyboard £50 ono Tel 208 108 Notts

ZX81 S/W for sale. All original top games. Half price. Please ring 01 337 8124

ZX81 (1K) + Full size Maplin keyboard + 16K software tapes. Computer recently overhauled. Complete £35. Phone Upminster 51355

ZX81 16K + s/w of £100. All leads and manuals. Jon 0625 878064 sell for £49.00

16K ZX81 and cassette recorder and of type in programs plus tapes ie Asteroids Centipede vgc £55. Tel Faversham 535102.

ZX81 16K, manuals + leads and of s/w keyboard toolkit inc. giving extra functions + mags. Bristol as new £55 ono Tel 01 381 0378

ZX81 BUSINESS s/w worth £80. Offers please! Tel Birmingham 38K 4732.

SELL ZX81 software mags, ZXAS flight simulation, history english, case 4 (Orwin) Night Gunner 2X scramble 1K brakeout. Worth own £45 sell for £20 or £2 each. Ring Bristol (0272) 560138 Adrian

Dragons for sale

DRAGON 32 2 Joysticks 25 tapes 13 books £170 ono Tel 01 493 0818.

DRAGON 32 boxed two Joysticks £150 of software b/w television plus lots of magazines, manual and handbook. Sell lot for £230. Ring 01-660-3801 (evening)

DRAGON 32 Joysticks, large amount of software £150 Tel 021 444 5634. Tandy CGP 115 printer printer also for Dragon and same boxed Tel 021 444 5634 £100

DRAGON Excellent condition including 10 cassettes, 1 cartridge, 1 pair of Joysticks light gen. Programming code mags £330 Bargain at £180 ono Tel 01 485 9886 Mon-Thurs eves.

DRAGON 32 £100 worth of software starter. Stand new £160 Tel Wolverhampton 732 679

DRAGON 32 leads manuals joystick, b ooks 12 DU magazines, games. v.g.c. £160 Tel (021) 744 8878 (after 6pm)

DRAGON 32. Computer & joystick & s/w £100 Tel Bristol (0272) 649441

DRAGON 32. 6 months old joystick, magazines & s/w inc Chuckie Egg, King and Frogger etc. £100 or swap for Spectrum 48K & s/w if possible. Tel. Mansfield (Notts) 84546.

DRAGON 32 with cassette recorder joysticks, lots of s/w £99 Tel 203 7884 (Hendon) Jason Mersky

DRAGON 32 3 joysticks and of mags. 1 300/c £180 s/w, £100 Tel Hitching (042) 812 526

DRAGON 32 & disk unit, disk joystick cartridges tapes £200 Tel Windsor 51750 (eves.)

DRAGON 32 5 months old £132 s/w 2 joysticks tape recorder & mags £286 o.n.o Tel 021 558 0635

DRAGON 32, boxed as new joysticks, cartridge all Dragon users light pen. Software includes Chuckie Egg, Ugh, Leggit Danger Ranger Shuttle King, Frogger Crazy Painter and more £150 Tel Bolton 661381

DRAGON/ORIC SOFTWARE WANTED We can pay excellent royalties for games adventures utilities. No obligation. Send cassette to Orion Software 59 Prince Street Rochdale Lancs. Make money with your game!!

DRAGON 32. For sale still boxed as new. All the usual magazines plus joystick quick sale £140. 4 The Green Cheadle Hulme Stockport. Tel 061-485 5886

BOXED DRAGON 48K with Micro owl's 64K RAM upgrade includes forth language. Runs cartridge programs on cassette tape. Joysticks four boxes extensive software £200 or nearest offer includes delivery 0676 356840

DRAGON 32 Joysticks, dustcover light pen £100 of software including Donkey King Juniors Revenge Frogger £130 Buyer collects or sell software separately at half price. Tel Haywards Heath (0444) 413687

DRAGON 32 + 1 Joystick + Cassette Recorder. Only 6 months old. Still under guarantee. Loads of cassette software including Frogger UGM Mined out, The King etc. Lots of magazine software in superb condition easily worth £380 sell for £180 ono Telephone Stevenage 356258

POKES + ROUTINES for Dragon 32 to make programs unstable unsaveable unbreakable uncopiable and a whole lot more. Send cheque/PO for £1 to A. J Wass, 19 Fernwood Marple Bridge Stockport, SK6 5BE

DRAGON 32. No pirated s/w joysticks light pen, adventure s/w + boxes and manuals £180 the lot. Tel 01 208 2062 (Ian)

DRAGON PROGRAMS for sale or swap. Tapes by Microdeal Salamander etc. Write Mavis, 36 Long Road New Heath Manchester M10 8NX

DRAGON 32 TAPES. Twelve original cassettes for sale or swap other Dragon software. Titles by Microdeal, Salamander etc. Phone 061 682 8024 (after 7pm please)

DRAGON SOFTWARE. Alcatraz Frogger Calixto Island Night Flight, Cuthbert Goes Digging. For sale or swap. Half price. Ring Phil Peterborough 269748

DRAGON 32 2 Joysticks 13 tapes (games) 2 cartridges (games) All leads and software in good condition £230 ono Fareham (0232) 283764

£100 OF S/W for Dragon 32, Joystick, Books and cartridge. Sell for £30 ono Tel Wolverhampton 732679

DRAGON 32, still boxed under guarantee £30 of s/w £90 ono (04948) 3342

DRAGON 32 disc drive unused. Bought in error £220.00 Tel 01 840-1271 after 6pm.

DRAGON 32, tape Joystick four Microdeal games manual on assembly language programming 3 years membership of a s/w club. One year subscription to Dragon User £140 ono Crawley (31830) 5pm

DRAGON 32 9 months old. Good condition £130 of s/w Joystick ie Donkey Android Space Control tape. Any realistic offers. 01-749 3831 Colin Newman.

Wanted

ZX PRINTER WANTED Swap for Chess Intruders Meads Planetoids H Horace Androids Cruising Jackpot Derbyday T Tower Meteors 3D-Tanx Softalk 2 and Sorcerers Castle or sell £3.00 each. Ring Rochdale 50246 after 6pm.

WANTED, ZX Spectrum at reasonable price of £100 in Merseyside area. Preferably on the Wirral, Phone 051 342-6376

SWAP SPECTRUM educational software for four to eight year olds. Will swap any within age group for Pathfinder ABC Lift-off Alphabet, Hot Dot, Spotter etc. etc. 01-800 4767

SPECTRUM swap Level Nine 9 Lords of Time for any other Level Nine 9 Golden Baton for any other mysterious adventure. Phone Coalville 38229 after 4pm Bob

VIC-20 person will swap Vic-20 games with others. Telephone G C M O. on (0222) 33888 (evenings except Wednesday). I am definitely not swapping my software company programs for typed in magazine efforts!

WANTED 16K Ram pack for Commodore VIC 20. Phone Bob Wilson on Swansea (0792) 466063

GOOD AS NEW (as still boxed) Aquarius computer mini-expander 16K memory logo cartridge manuals, burger time and adventure cartridges sale four games. 16K Spectrum wanted with software (sell boxed) Tel 01-904 3661

SWAP Original Spectrum software 2200M games designer. Scrabble Racing Manager Jetset Willy Countries of the World Wilmee education programs or Kempston conversion tapes. Phone 0226 710119 (after 6)

SWAP Cyrus chess Cookie Jetpac Psion Flight, Ant Attack and Knot in 3D for £25 or micro prolog. Also for sale mastering machine code on ZX80 ZX81. £4 or L.Jelman K. Sullivan 20 Stewarts Town Avenue, Belfast, Northern Ireland.

WANTED TO SWAP Education programs or Kempston conversion tapes for Zzoom Games Designer Hunter Killer Scrabble Jet Set Willy Racing Manager Countries of the World. Phone Barnsley 710119 (after 6)

ORIGINAL SPECTRUM SOFTWARE for swap. Games Designer Hunter Killer Scrabble Zzoom Racing Manager, Jet Set Willy Countries of the World. Wanted Kempston conversion tapes or education programs. Phone 0226 710119 (after 6)

I HAVE CARTRIDGE GAMES Munchmen and Video Games 1 for TI99/4A. Worth £25 to swap for the Hobbit or Valhalla for the ZX Spectrum. Tel Alan (0997) 43387

SWAP THE QUILL, boxed. Unwanted gift for H.U.R.G. Phone 01-48K 1874 (any time)

SPECTRUM 48K with Cambridge joystick, interface and joystick. £70 worth of software including Kong Atic Atac and Splat. Still under guarantee excellent condition good bargain for £142. Tel Bookham 58711 (evenings)

WANTED M/C Monitor 16K Rampack, Super Expander for VIC20. Will pay £15 for each. Write to T.P. Chadwick St Catherine's College Oxford

SWAP Valhalla and Ocean & Kong for Quickshot or TAC 2 joystick. Send offers to 15 Pounds Close Brushford nr Dulverton Somerset TA22 9AL.

SWAP National Z1MHz amateur transceiver SSB/CW 10/2W output digital readout mobile rig value approx. £130 For sale Dragon 32 outfit offered ring Duncan MK 0908 663838

CBM 64 software to swap. Many titles (all letters answered). Write Andre Sond Postale No 118 Liegex Belgium.

CURRAH SPEECH will swap for the Quill & Documentation and the Alchemist or will swap with Kempston joystick for a proper Spectrum keyboard. S Bunt 60 Broadlea Oval Bramley Leeds 13 W13 2SU

ZX MICRODRIVE + Interface 1 brand new unused 48K one Tel 01 898 6282.

ZX PRINTER and paper for swap with a quality stereo cassette player with two sets of headphones. Send or write to P Abley, 37 SainT John's Gardens Sunnybrow Crook Co Durham DL15 0LU
SPECTRUM SOFTWARE. To swap or sell. Chequered Flag Firebirds Royal Birkdale J S W Manic Miner Fred Android 2. Over 150 other titles available. Send SAE to H.D.C.R., 33 Muirheart Road Glasgow Scotland (List will be sent)
ZX81 WANTED With leads telephone Dunblane 824299 evenings/weekends.
SWAP SPECTRUM educational originals ABC Lift-off Pathfinder Alphabet and Hot Dot Spotter for similar age group 01-800 6787 after 7pm or weekends.
WANTED 48K Spectrum with recorder and books s/w Pay £135 cash. Wasie 49 Haylett Gardens, Surbiton Crescent, Kingston Surrey KT1 2ER Must be in immaculate condition Collect within London area

For sale

ORIC1 48K games worth £70 mags and books over £150 MLP 40 books printer £140 or £290 the lot Buyer collects Tel Wisbech 69516. Eves.
SHARP MZ-80K 48K Home Computer built-in monitor and cassette deck + wp keyboard includes software (languages + games + utilities) manuals and dust cover £210 o n o Phone Warrington (0925) 56861 evenings (Peter)
JET SET Willy Alchemist, Hurg, Urban Upstart, Zaxxan Scope Gnerga Run, FP compiler Bees and the Bees etc for sale Phone 061 881 3861 Tony
SUPER EXPANDER CARTRIDGE plus Vic Graphics Book for Vic 20 £25 Chess, £6 Pools Forecaster £5 Colonel's House Adventure £5. Pool £4 Telephone 0702 529431
COMPUTER (popular leads) with Ram 64K, printer and business software in good condition. Please send particulars and price expected to Mr SP, 64 Clarendon Road, Harrow HA1 1BL
HORNBY Railway for sale Ideas for computer control or adding to existing layout 6' × 4 double loop + many sidings and carriages Only £70 absolute bargain! Phone Chris on Rugby (0788) 832488
ARCADIA, ASTEROIDS, A.V.I.T W and and more top selling titles to swap for other Vic 20 software Tel (0226) 28564 after 5 pm
DGING FOR CHEAP PRICES! Adventure cartridges Commodore's Voodoo Castle £7 "The Count" £6 and swap "Adventureland" for "Pirate Cove" or "Mission Impossible" Phone Now 0558 822509 (Please hurry) (Help)
SHARP MZ-80A. Good as new all original Sharp software leads manuals + dust cover + extra professional games worth over £500 Only £299. Tel. Walton-on-Thames 244788
REGENT 200 with 90 key keyboard built-in monitor RS232 (19200 BAD) centronics manual etc etc Exchange for Spectrum CBM 64 or why phone 061-432 4535 evening or weekend.
CBS COLECO for sale with Donkey Kong and Zaxxon, £80 or exchange CBM 64 cash and B Levkin, 23 Stonesley Walk, Great Lever, Bolton Lancs BL3 2TD
FOR SALE. A crack shot joystick + games for Spectrum Tel Cranbourne 207 after 4 pm
96K LYNX with starter speech synthesiser Lots of Spectrum s/w to swap. No reasonable offer refused Tel 0274 72 985 (after 5 p m)
IMP DOT MATRIX PRINTER. Tractor or friction feed. 80 cps and double width characters, RS 232, ideal for Spectrum with interface I £100 Tel 01 337 1623
SHARP MZ 711 with data deck Cost £300 accept £175 or swap for Spectrum 48K with s/w Tel 01 708 3269
ORIC COMPUTER for sale Nearly new with software books and magazines. Unwanted gift, excellent condition Best offer secures. Tel (0473) 822284 (evenings)
CURRAH SPEECH unit for Spectrum computer New — unwanted gift Bargain at £20 Tel e e Durham 0388 814717
TEXAS TI99/4A extended Basic cartridge for sale £33 ono Genuine reason for sale Phone Derek Carter Swindon (0793) 692123 or write 15 Dart Ave. Greenmeadow Swindon, Wilts SN2 3LA with sae
THE CHIP with Archiver Editor software Brand new Fits Atari 810 disk drive. £90 ono. Tel 0272 811011 after 4 30pm
BAKER Z80 data entry pad As new Retails £686 only £250 or swap BBC B or other micro or printer VDU DOS other Hardware Various operating software available Details 0491 874117
NASCOM 48K Rom, 64K Ram contains Pascal Pilot Zeap NAS-DIS Debug NAS-PEN 8000 Baud digital cassette drive All documentation £300 ono Tel Sellwood 0235 21900 ext 5357 office hours only
INTELLIVISION leads game system, includes games console Intellivoice module and 18 games cartridges contained in books. Very good condition £140 Phone Farningham 2456 evenings

FOR SALE. One A.G.F programmable joystick interface with Quickshot twin joystick Unwanted prize-in Boat under guarantee until December For quick sale £25 (no offers) Phone Barry on High Wycombe (0494) 20282

Diary

Event	Venue	Dates	Admission	Organisers
Micro Trade 84 (Trade only)	Barbican London	July 4-6 10 00am-6 00pm	Free	Montbuild Ltd. 11 Manchester Sq. London W1 01-486 1951
The Graig Microfair	Graig School Pwll Llanelli Dyfed	July 7 11 00am-5.00pm	50p	Graig School Parents Association c/o 5 Warborough Close Llanelli Dyfed SA15 3LH
What Micro? Computer Show	Battersea Park London	July 14-15 10 00am-7 00pm	£1.50	VNU Business Publications Evelyn House 62 Oxford Street London W1A 2HG 01-636 6890
Electron and BBC Micro User Show	Alexandra Palace London	July 19-21 10 00am-6.00pm July 22 10 00am-6 00pm	£3 00 adults £2 00 children	Database Publications 68 Chester Road Hazel Grove Stockport 061-456 8383
Scottish Personal Computer World Show	Assembly Halls George Street Edinburgh	July 26-27 9 30am-8 00pm July 28 9.30am-5 00pm	as yet unfixed	Scottish Industrial and Trade Exhibitions for Charlotte Square Edinburgh EH2 4DR 031-225 5486

ADVENTURE HELPLINE

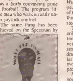
Micro: *ZX Spectrum*
Adventure: *Artic Advent A — Planet of Death*
Problem. *How to operate the computer after coming down the pit, past the green man and along the tunnel*
Name *Stuart Crawford*
Address *16 Magheralave Road Lisburn, C Antrim N Ireland*
Micro. *48K ZX Spectrum*
Adventure: *Knights Quest*
Problem *How do I operate the compass in the deserted wastelands and am I on the right trade*
Name *Simon Bennett*
Address *46 North Way quintrell Downs, Newquay, Cornwall TR84LA*
Micro. *Commodore 64*
Adventure *Hobbit*
Problem *We cant get any further than the river on it gets boring going to the same place and stopping P S Please help*
Name *Gareth Lloyd*
Address: *20 Chevin Close, Little Hare Scott Lane, Shrewsbury, Shropshire*
Micro *Sinclair ZX Spectrum*
Adventure *Smugglers Cove*
Problem *I cannot get past the trench stream, oak door, or waterfall I have all the objects available but cant find key word*
Name *Mr M F Maxey*
Address *Furze Cottage Plaistow Rd Kirdford, West Sussex RH14 0LA*
Micro *Spectrum (48K)*
Adventure. *Espionage Island (Adventure D)*
Problem *I can't get past the first but Where I am in the plane under attack.*
Name *George Howard*
Address *31 Springfield Road, Windsor Berkshire SL4 3PP*
Micro *ZX Spectrum 48k*
Adventure. *The Hobbit*
Problem. *I can t get out of the goblin dungeon*
Name: *Nicholas Harrison*
Address: *33 Mount Drive, Nantwich Cheshire*
Micro: *BBC*
Adventure *Quest for the Holy Grail*
Problem: *I am unable to pass the black, or blue knight also the oak tree so I am unable to get any further*
Name: *John Lapham*
Address: *68 Friars Walk Southgate London N14 5LN*
Micro. *Vic 20*
Adventure: *Pirates Cove*
Problem. *I where to find keys ... how to build a boat to treasure island*
Name *Anthony Gay*
Address *418 Retford Road, Sheffield, S13 9RD*

New Releases

CUP FINAL

You may have seen Commodore's *International Soccer* cartridge in which you get to play a fairly convincing game of football. The program lit the man who was currently under joystick control.

The same thing has been achieved on the Spectrum by



Artic Software although the graphics are obviously not the equal of the Commodore game.

World Cup Football allows you to pick your team (from a choice of 40 international sides) and play the world cup final — either against the machine or another player.

There are some nice touches — continuous football type music and cheering fans amongst other things. You can also play out the rounds of the cup and lead up to the final match, the cup itself is presented at the end, of course. Within the limitations of Spectrum graphics an excellent game.

Program	*World Cup*
Price	*£6.95*
Micro	*Spectrum*
Supplier	*Artic Computing, Main Street, Brandesburton, Driffield, YO25 8RL*

VERB, NOUN

Mosaic's Bookware is a great idea — mixing books and adventure games so that the latter's enhanced by the former both by clues contained in the book and by a greater sense of provided by the extra detail it can hold has to be a good idea.

But I don't think Mosaic have really cracked it yet — the adventures are simply not good enough. The latest release illustrates this well. *The Width of the World* is a neat package consisting of the book of that name and an adventure that is a kind of 'sequel' to the story.

The adventure game is described as 'dramatic' and 'illustrated' — in fact, it is simple verb noun entry with very simple graphics apparently drawn in Basic – people familiar with *Hobbit*, *Valhalla* or even *Knight's Quest* will find it pretty silly.

Maybe it's intended for young kids and is deliberately simple, if so I can only suggest that the kids are unlikely to thank Mosaic. It appears that nearly all the program is written in Basic as I discovered by judiciously pressing a few keys.

Program	*The Width of the World*
Price	*£9.95*
Micro	*Spectrum*
Supplier	*Mosaic Publishing, 187 Upper Street, London N1 1RQ*

REPRESSIVE

Could this be the beginning of a new age of puritanism can guilt and misery once more be rearing their repressive heads? God knows. But we're getting lots of programs featuring hell and demons these days. Most recently a program called *Mr Mephisto* from a new company called Euro-Byte.

Plotwise it's a case of Dante eat your heart out — you are trying to ascend to heaven and as we all konw this is fraught with difficulties. These take the form of hoards of devils and other denizons of the underworld that run about pushing you off the escalators that are your passport to heaven into the fires of hell — I thought it was supposed to be your moral worth that determined that.

The way out of each level is a ring or other object you must reach at the top of the screen, grasp it and a doorway may open. There are several screens of purgatorial action and a gothic sound track. Not only good fun but undoubtedly full of moral lessons for us all.

Program	*Mr Mephisto*
Price	*£6.95*

Pick of the week

HIGH ENERGY ORCHIDS

Ultimate has now released *Sabre Wulf*, its follow up to *Atic Atak* — a follow up for more than historical reasons — the game continues in the same vein of mixing arcade and adventures.

However, there is one significant difference between *Sabre Wulf* and all the games that have preceded it from Ultimate — it comes in a special box and costs £9.95. Being an Ultimate game ensures that it's going to be slick and graphically superb but is it worth the extra money?

Although it comes with a fold out glossy booklet *Sabre Wulf* features the usual veil of silence over what the hell you're supposed to do in the game beyond the general information that you should collect four pieces of an amulet and find the exit.

A few clues may be deduced from the lengthy 'features' list indicating all the wonderful things the game contains since some of these are 'blue super high energy orchids and white cure orchids' you can guess the orchids are not just there for decoration.

The layout of the game is a leafy, tropical maze over dozens of screens. You move an explorer through the maze, picking up all kinds of useful objects and fighting off/running away from animals which bounce, slither, creep and, in the case of Hippos and Rhinos, charge at you without the slightest provocation. The graphics both for the maze and the animals are excellent.

After playing the game all weekend I came to the conclusion that the orchids, which I had been avoiding, are actually helpful to get through bits of maze very quickly without being beset by beasts – I also discovered there is essentially only one route to get anywhere in the maze. My Maximum score was 16%.

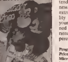
Sabre Wulf is extremely impressive possibly even Ultimate's most impressive game. I don't think that it's £4.45 better (the differance between the price of this and of previous games) but then Ultimate could always argue that by the industry standards those games were cheap anyway. Curiously enough, for people into trivial details, it has the worst loader screen of any Ultimate game — let that one slip through the net, eh lads? Oh yes — see how long it takes you to find out how to get extra lives. See you in the *Underworld*.

Program	*Sabre Wulf*
Price	*£9.95*
Micro	*Spectrum*
Supplier	*Ashby Computers & Graphics, The Green, Ashby de la Zouch, Leicestershire, LE6 5JU*

Micro	*Commodore 64*
Supplier	*Euro Byte Churchill House Ockford Road Godalming Surrey GU7 1QY*

QUICK RESPONSE

The idea of Spanish software may sound pretty strange but it could be that if you're a Spectrum owner you'll find yourself buying some pretty soon. A Spanish company called Ventamatic is planning to distribute games for the Spectrum (and other machines) in this country.



For some doubtless highly jingoistic reason this idea did not at first fill me with much enthusiasm. In fact the games are very good, featuring all the current trappings of large sprites, pixel movement, etc.

Escalador Loco – which I suppose will get its name changed as Mad Climber or something over here – has graphics of almost Ultimate quality and the quick response game to end all quick response games.

You control a man who is climbing up the side of a building — large graphics, the man is about a third of a screen tall. You move him left arm, right arm, feet up, left, right, trying to get him to the top of the building. This is difficult because various angry bearded men (actually they look like Tony Bridge) appear at the windows and drop flower pots on you; additionally and possibly even more painfully window shutters occasionally drop on your hands. The end result of this is you plummet back to the beginning again. It is horribly addictive.

Program	*Escalador Loco*
Price	*£5.95*
Micro	*Spectrum*
Supplier	*Various suppliers*

BUDGET

Account Book is a personal finance program for the Oric or Atmos machines. It enables you to keep, update and analyse personal financial records — up to 33 accounts can be used at any one time.

Although such programs tend to be much of a muchness, this one does have a few extra features — a budget facility enables you to compare your spending against a planned model (a depressing experience) both as a total and as a percentage.

Program	*Account Book*
Price	*£12.50*
Micro	*Oric*
Supplier	*Softbacks PO Box 257 Watford WD1 7Q*

PLASMA BOLTS

In support of those people who still love their ZX81 and won't trade it in for another machine no matter what, here is good news in the form of another independent supplier still issuing software for it.

Unicorn Software has just released *Climber* — an arcade game requiring 16K. Basically, what you do is climb avoiding guardian droids and plasma bolts whilst collecting power batons.

The game has some nice touches like a key redefine that lets you save your new choice of keys and an option to radically change the speed and difficulty of the game.

Program	*Climber*
Price	*£3.95*
Micro	*ZX81 (16K)*
Supplier	*Unicorn Micro Systems 312 Charminster Road Bournemouth BH8 9RT*

LINE GRAPHICS

Another version of the classic *Battlezone* game for the Spectrum. This time from Realtime Software whose *3D Tank Duel* is one of the best variants I've seen.

The simple idea of the game is to move your tank around a bleak landscape shooting enemy tanks and occasional UFOs; obviously the enemy tanks are going to shoot back.

What makes the game special is the way all objects are drawn in 3D using line graphics — this gives a real sense of perspective and depth — you can sneak up behind an enemy tank or hide behind an object. Mainly you blast away, but as you get more skillful so tactics play a more and more important part in the game. If you want a version of *Battlezone* for the Spectrum, at the moment this looks like the one to buy.

Program	*Tank Duel*
Price	*£5.50*
Micro	*Spectrum*
Supplier	*Realtime Software Prospect House 32 Sovereign Street Leeds LS1 4BJ*

COLOUR CODE

Finsbury Computers are a new company (to me anyway) doing software for a range of computers. *Astrocode* for the Spectrum is, in fact, a disguised version of *Mastermind*.

The disguise takes the form of a little scenario which explains that what you are really doing is seeking the four colour coded pieces to complete a damaged circuit which will enable you to complete your repairs and fly your spaceship away from a meteor storm.

Beyond that, there is little to say except that if you don't have a version of *Mastermind* it's quite a good one.

Program	*Astrocode*
Price	*£4.99*
Micro	*Spectrum*
Supplier	*Finsbury Computers 25/27 Stroud Green London N4 3EF*

MUSIC BUFFS

Pop Quiz is a computer game based on Stuart Henry's well known program on Radio Luxembourg in which you have to answer pop questions and try to guess the notes of a mystery tune.

Obviously, there are no great programming feats in this one — the only real effort involved must have been compiling (and typing in) the hundreds of questions available. Still, it is good fun for pop music buffs and a section of the profits go to fight Multiple Sclerosis.

Program	*Pop Quiz*
Price	*£5.75*
Micro	*Spectrum*
Supplier	*Bellflower Software 6 Rosewood Avenue Greenford Middlesex*

New Releases is designed to let people know what software is coming on to the market. If you have a new game or utility which you are about to release send a copy and accompanying details to New Releases, Popular Computing Weekly, 12-13 Little Newport Street, WC2R 3LD



Top 10

Tx 20

1	(1)	Duck Shoot	(Master Tronics)
2	(3)	Tarsi Commerkoz	(Thorn EMI)
3	(10)	Tower of Evil	(Thorn EMI)
4	(–)	Snooker	(Visions)
5	(5)	Computer War	(Thorn EMI)
6	(4)	Chariot Race	(Micro Antics)
7	(–)	Vegas Jackpot	(Master Tronics)
8	(–)	Phantom Attack	(Master Tronics)
9	(–)	Sub Hunt	(Master Tronics)
10	(–)	Games Designer	(Galactic)

(Figures compiled by Boots/Websters)

Atari*

1	(–)	Incredible Hulk	(Adventure International)
2	(1)	Solo Flight	(English)
3	(7)	Airwing 2	(English)†
4	(6)	Stinky	(Cosmi)
5	(2)	Rally Speedway	(Adventure International)
6	(–)	Jetboot Jack	(English)
7	(–)	Zaxxon	(Datasoft)
8	(8)	Captain Sticky's Gold	(English)†
9	(3)	Warriors	(Calisto)†
10	(–)	Flak	Funsoft

‡48K Disc †32K Cassette *Cartridge
(Figures compiled by Calisto Computers 021 632 6458)

ZX81*

1	(8)	Alien Rain	(CRL)
2	(2)	Krypton Ordeal	(Novus)
	(4)	Planet Raider	(Novus)
4	(3)	Walk the Plank	(Novus)
5	(7)	Beak Crystal	(Camel)
6	(6)	Flight Simulation	(Psion)
7	(–)	Mothership	(Psion)
8	(–)	Reversi	(Psion)
9	(–)	Spookyze	(Psion)
10	(–)	City Patrol	(Psion)

* All 16K
(Figures compiled by Boots/Websters)

Spectrum*

1	(1)	Jet Set Willy	(Software Projects)
2	(6)	Trashman	(New Generation)
3	(–)	Psytron	(Beyond)
4	(7)	Chequered Flag	(Psion)
5	(–)	Jack and the Beanstalk	(Thor)
6	(2)	Zaxxon	Starzone
7	( )	Zig Zag	(DK'Tronics)
8	(4)	Blue Thunder	(Foundry Systems)
9	(–)	Fighter Pilot	(Digital Integration)
10	(–)	Sorcerer	(Psion)

* All 48K
(Figures by WH Smith and Son, London)

BBC

1	(–)	Chuckie Egg	(A+F)
2	(1)	Blagger	(Alligata)
3	(4)	Fortress	(Pace)
4	(–)	Q Man	(M R M)
5	(5)	Twin Kingdom Valley	(Bug Byte)
6	(–)	Dambusters	(Alligata)
7	(–)	Eagles Wing	(Invasion)
8	(–)	1984	(Incentive)
9	( )	Legion	(Software Projects)
10	(2)	Aviator	(Acornsoft)

*All model B
(Figures compiled by Micro Management 0473 59181)

Dragon 32

1	(–)	Buzzard Bait	(Microdeal)
2	(2)	Cuthbert In Tombs	(Microdeal)
3	(–)	Dragon Chess	(Oasis Software)
4	(5)	Hungry Horace	(Melbourne House)
5	(–)	Bug Diver	(Master Tronics)
6	(4)	Eightball	(Microdeal)
	(–)	Sprite Magic	(Knight)
8	(–)	Dungeon Raid	(Microdeal)
	(6)	Skramble	(Microdeal)
	(–)	Mr Dig	(Microdeal)

(Figures compiled by Boots/Websters)

Commodore 64

1	(2)	BMX Racers	(Master Tronics)
2	(5)	Space Walk	(Master Tronics)
3	(1)	Manic Miner	(Software Projects)
4	(–)	Beach Head	(Centresoft)
5	(–)	Snooker	(Visions)
6	(3)	Black Hawk	(Thorn EMI)
7	(–)	Colossus Chess	(CDS)
8	(4)	Space Pilot	(Anirog)
9	(–)	Chuckie Egg	(A & F)
	(–)	Revelation	(Softek)
10	(–)	Solo Flight	(Centresoft)

(Figures compiled by Boots/Websters)

Books

1	(4)	Commodore 64 Programmers Reference Guide, *Commodore*	(Pitman)
2	(3)	50 Programs for Commodore 64 *Erskine et al*	(Pan)
3	(6)	Guide to playing the Hobbit, *Ellen*	(Melbourne House)
4	(5)	Step by Step Programming Spectrum Book 1 *Graham*	(Dorling Kindersley)
5	(8)	Easy Programs for Commodore 64 *Stewart and Jones*	(Shiva)
	(–)	Creepy Computer Games *Erskine et al*	(Usborne)
7	(2)	Step by Step Programming Spectrum Book 2. *Graham*	(Dorling Kindersley)
	(1)	Sinclair QL Companion *Allan*	(Pitman)
8	(7)	Spectrum Sound and Graphics, *Money*	(Granada)
	(–)	40 Educational Games for Commodore 64, *Apps*	(Granada)

(Figures compiled by Bookwise)

Book Ends

PSEUDO ARRAYS

Graphic Adventures for the Spectrum 48K is a book consisting almost entirely of listings. More than that, since this is graphic adventures we're talking about it's a book consisting almost entirely of *vast* listings

That being said I think these look like programs that might produce games which are worth playing, many of them have machine code subroutines to speed up the response times and the length suggests that they won't be too easy to solve

In all there are seven complete programs with names like *Nightmare Park* and *3D Maze*, supposedly each one illustrates a different programming technique like pseudo arrays or memory saving — anyway if you like adventure listings this will do fine

Book *Graphic Adventures*
Price *£5 95 for Spectrum 48K*
Micro *Spectrum*
Supplier *MP Micropress Castle House 27 London Road Tunbridge Wells Kent TN1 1BX*

DISC FILING

Getting More from your BBC and Electron Computers is one of those books you read right after the 'simple basic on' but before the 'introduction to machine code on'. It's a nebulous area for books and they can vary widely between the diabolical and the very good. Fortunately this belongs in the latter camp

The book is packed with detailed information about everything from multiscreen graphics to disc filing and databases. The book is also liberally scattered with useful programs and exercises.

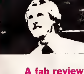
Book *Getting More from your BBC and Electron Computers*
Price *£6 95*
Micro *BBC Electron*
Supplier *Sigma Technical Press 5 Alton Road Wilmslow Cheshire SK9 5DY*

This Week

Program	Type	Micro	Price	Supplier
Drum Kit	Ut	BBC B	£9.95	Quicksilva
Gulp	Arc	BBC B	£6.95	Peaksoft
Ossie	Arc	BBC B	£6.95	Peaksoft
3D Tunnel	Arc	Commodore 64	£7.95	New Generation
Count with Oliver	Ed	Commodore 64	£7.95	Mirrorsoft
Cyberton Mission	Arc	Commodore 64	£6.95	Micropower
Escape	Arc	Commodore 64	£7 95	New Generation
Felix in the Factory	Arc	Commodore 64	£8 95	Micro Power
Figaro 64	Ut	Commodore 64	£75.95	Saxon
Ghouls	Arc	Commodore 64	£8 95	Micro Power
Harrier Attack	Arc	Commodore 64	£6 95	Durell
Jungle Trouble	Arc	Commodore 64	£6.95	Durell
Look Sharp	Ed	Commodore 64	£7 95	Mirrorsoft
Swoop	Arc	Commodore 64	£8.95	Micro Power
Tales of the Arabian	Arc	Commodore 64	£7 90	Interceptor
Trashman	Arc	Commodore 64	£7.95	New Generation
Valhalla 64	Ad	Commodore 64	£14.95	Legend
Electron Art	Ut	Electron	£14.95	Quicksilva
Gatecrasher	S	Electron	£8.95	Quicksilva
Mined Out	S	Oric	£6.95	Quicksilva
Velnor's Lair	Ad	Oric	£6.95	Quicksilva
Booty and the Egg Snatches	Arc	Spectrum	£6.95	Fantasy
Dartz	Arc	Spectrum	£5.00	Automata
Dragonstar Trilogy	Ad	Spectrum	£4 95	Delta 4
Misfits	Arc	Spectrum	£5.95	Eclipse
Gatecrasher	S	Spectrum	£5 95	Quicksilva
Moder 80	Ut	Spectrum	£5 99	Seven Stars
Sherwood Forest	Ad	Spectrum	£4.50	Delta 4
Star Searcher	Ad	Spectrum	£1 99	Scorpio
The Code Book Caper	Ad	Spectrum	£1 99	Scorpio
The Hulk	Ad	Spectrum	£9.95	Adventure International
Tornado Low Level	Arc	Spectrum	£5.95	Vortex
War of the Worlds	Ad	Spectrum	£7 95	CRL
3D Defenda	Arc	ZX81	£3.95	James Paton
Caveman Panic	Arc	ZX81	£3.95	James Paton
Flower Power	Arc	ZX81	£3.95	James Paton
Pengi	Arc	ZX81	£3.95	James Paton
Strike Panic	Arc	ZX81	£3.95	James Paton
Tertex 8x8	Arc	ZX81	£3.95	James Paton

Key: **Ad** — adventure/**Arc** — arcade/**Ed** — education/
S — strategy-simulation/**Ut** — utility

This Week is a new section that covers all the new software coming on to the home micro market each week. All suppliers should send details of their new programs to This Week, Popular Computing Weekly 12 13 Little Newport Street, London WC2R 3LD



A fab review

Having written a few books, and having had some of them reviewed I am interested in how reviews are carried out.

As a reader of book reviews I have noticed an increasing tendency to perform "front and back" (*fab*) reviews. *Fab* reviews are those reviews which are obviously written on the basis of the (so called) reviewer reading the front pages, the back pages and possibly the odd bit in between.

Exactly the same procedure may be followed with software — one quick look at the title screen and on to the next.

The pressures on reviewers to perform *fab* reviews are great. In many circumstances it seems that the quality of the review does not count, for what is really important is the need to fill space in the magazine and/or to produce the review in as little time as possible.

In general, there are two main styles of review: the first type merely gives the reader an indication of what the author and publisher consider is in the book, while the second type attempts to give a considered evaluation of the worth of a book. We can term the first style the "outline" review and the second style as the "critical" review.

In *Popular Computing Weekly*, for example, the New Releases and book reviews are unattributed (that is, the reader does not know who wrote the review). Such use of anonymous reviews is perfectly acceptable for outline reviews, but once an outline review becomes a critical review the reviewer should be named.

If I read a critical review of a piece of software or a book, and I do not know who wrote the review, how can I ever build up a picture of the reviewer. One is always trying to find a reviewer with whom one consistently agrees.

Having had a go at *Popular Computing Weekly* for its unattributed reviews, it is only fair to examine other computer magazines which fair no better.

Fad reviews are usually very light on the actual content of any book being reviewed and large on irrelevant comment, with the addition of the odd quote to add a touch of respectability.

With a *fab* review, the first thing to remember as a reviewer is that you talk in generalities as much as possible, with particular emphasis on life, the universe, and everything. Taking a random sample:

Review 1: "However perplexed by the quantity of ****** books winging into the office ..."

Review 2: "Hardly a week goes by without another great book from ****** whacking onto the doormat."

A useful *fad* ploy is to accuse the book of being a "formula" book, which is an interesting accusation seeing that the whole concept of a *fab* review involves writing to a formula.

Review 3: "... we compared the chapter headings with another in the series ..."

Review 3: "[this book] follows ******'s traditional format by having plenty of listings for you to hack in ..."

And it's not just books. Magazine software reviews are often just as shallow.

Without wishing to be unkind, anybody could have written that review in five to ten minutes, not having seen the book before. Look at some reviews for yourself and work out to what extent they are *fab*.

The point that I am trying to make from all this is that any *reviewer* is being asked to put an opinion into print where others will invest it with some significance.

And as such the reviewer has a responsibility to both the readers and the company whose product is under scrutiny to take the time to do the thing justice.

People are obviously going to be influenced by any comments — favourable or not. Otherwise what is the point of the whole exercise?

An uncaring review can be very damaging to the reputation of a company whose product has been too lightly considered.

Boris Allen

Your starter for . . .

Puzzle No 112

Arlene, Darlene and Marlene were this week's contestants in the general knowledge quiz show. Each contestant was asked 20 questions and at the end of the programme the scoreboard showed the amount that each had won.

Arlene	£466
Darlene	£481
Marlene	£202

At the beginning of the program they were each given a balance of £100. Thereafter every easy question that they answered correctly won them £24, and every difficult question won £30. But if they got an answer wrong, £15 was deducted.

From the final scores can you say how many of each type of question were answered correctly, and how many wrong answers each competitor gave?

Solution to Puzzle 107

The problem involves finding hexadecimal numbers that consist of the same digits — though differently arranged — as their decimal equivalents. As a fair proportion of hex numbers contain letters, which need not be considered, the program takes those hex numbers which consist only of digits and converts them to their decimal counterparts. The results are then compared to determine if the same digits are present.

```
10 LET H = 10 20 LET H$ = STR$ H 30 LET D = 0 40
LET POWER = LEN (H$) - 1 50 FOR F = 1 TO LEN
(H$) 60 LET D = D + ((VAL(MID$(H$ F 1)) * 16
POWER)) 70 POWER = POWER - 1 80 NEXT F 90
LET D$ = STR$ (D) 100 IF LEN (H$) <> LEN (D$)
GOTO 220 110 LET PD = 1 120 LET SD = 0 130 LET
PH = 1 140 LET SH = 0 150 FOR Q = 1 TO LEN (D$)
160 LET PD = PD * VAL (MID$(D$ Q 1)) 170 LET SD =
SD + VAL (MID$(D$ Q 1)) 180 LET PH = PH * VAL
(MID$(H$ Q 1)) 190 LET SH = SH + VAL
(MID$(H$ Q 1)) 200 NEXT Q 210 IF PD = PH AND SD
= SH THEN PRINT D$ H$ 220 LET H = H + 1 230
GOTO 20
```

This reveals — apart from the single digit numbers 1 to 9 — two other possible sets of figures: 371 decimal which is equivalent to 173 hex and 915 decimal which is equivalent to 391 hex.

Winner of Puzzle No 107

The winner is D J A Carr, Setterfield Road, Margate, Kent, who receives £10.

Rules

If the puzzle can be sensibly solved using a computer then the winner will have included a listing of the program used to find the correct answer. The closing date for entries to Puzzle No 112 is July 6.

The Hackers




but seriously AUTOMATA
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DARTZ an arrowing experience £5
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PI-BALLED — A triumph of the arcade programmer's art Starring the PiMan. Free offensive Reggae music Spectrum 48K £6
MORRIS MEETS THE BIKERS — exciting arcade fun, as seen on TV. Outrageous free doo-wop record Any Spectrum £6
YAKZEE — Bruddy wonderfurr game of ruck and skirr An oriental masterpiece for Dragon 32 plus Spectrum 48K £5
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OLYMPIMANIA — He's back! He's going for gold! He's sober! Free National Anthem on the flipside Spectrum 48K £6
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HE LOOKS LIKE OLD TURGY O'BESE! ARE THEY RELATED, DO YOU SUPPOSE?
SAME AGAIN DORIS ... NOW, AS WITH DARTS, IN 'DARTZ', WE HAVE A 501 OR 301 GAME OPTION...
IF HE DRINKS IN GALLONS, WHY DOES HE CARRY THAT PINT?
OH THAT'S A CHASER!
'ALLO, HE'S HAVING ANOTHER SUP.. KEEPS YOU HANGING ABOUT, DOESN'T HE?
BOO
COME ON! GET ON WITH IT!
LET'S SEE SOME ACTION, FATSO!
AYUP! T'CROWD ARE TURNIN' A BIT UGLY!
IT'S ALL THOSE CHEMICALS IN THE ALE Y'KNOW!
TRICK CAMERA WORK EH?
SAME AGAIN, DORIS!
BY 'ECK 'E CAN SINK 'IS ALE. 'E'LL BE WANTIN' TO LEAVE T'ROOM SOON
NO IN 'DARTZ', A VISIT TO THE OUTHOUSE MEANS A TURN MISSED - HE'LL SAVE UNTIL HE GOES HOME'
GLOG GLOG GLOG
LOOKS LIKE YOU MISS A TURN AFTER ALL, ERIC! ERIC! ERIC, SAY SOMETHING!
SAME AGAIN DORIS